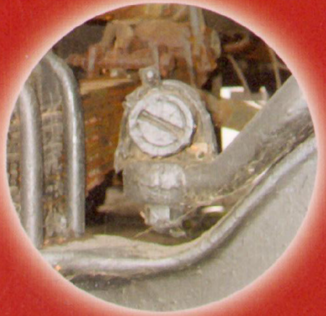
11018 • ENGLISH PUBLICATION • POLISH SUMMARY

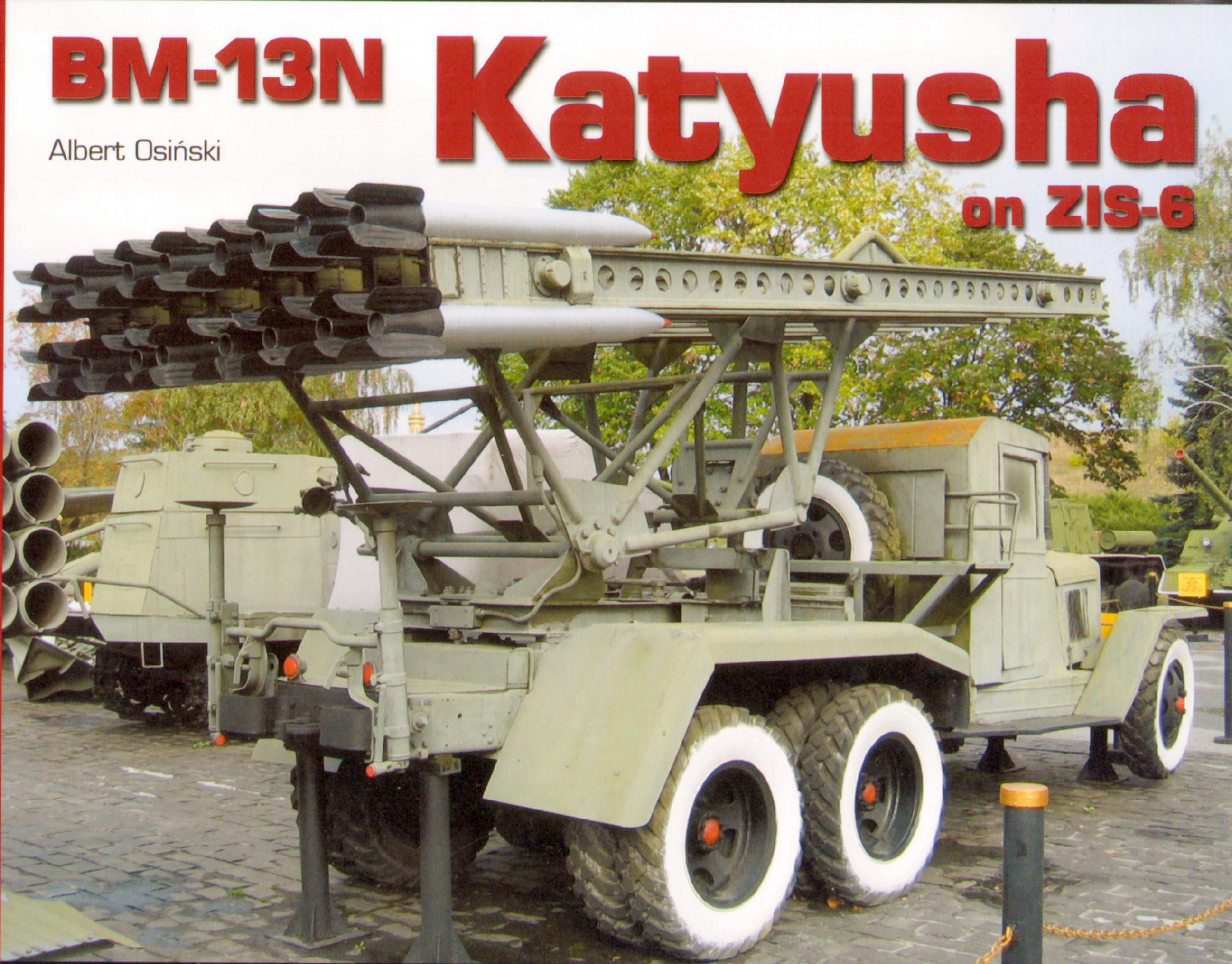
TOPSHOTS

BM-13N Katyusha

on ZIS-6

Albert Osiński





HIGH QUALITY MASKING FOIL FREE • 36 PAGES • 121 PHOTOS

KAGERO

11018

BM-13N Katyusha on ZIS-6
Albert Osiński

First Edition
Lublin 2005

Photos:
Albert Osiński

Photos on the cover:
Albert Osiński

Series Editor:
Albert Osiński

Translation: Tomasz Szlagor

Proof reading: Albert Osiński

Design: KAGERO STUDIO
Tomasz Gąska

OW KAGERO
ul. Mełgiewska 7-9
20-952 Lublin
tel./fax (+48-81) 749 11 81
tel. (+48-81) 749 20 20

e-mail: kagero@kagero.pl
marketing@kagero.pl
www.kagero.pl

ISBN 83-89088-94-0

© All rights reserved
© Wszystkie prawa zastrzeżone. Wykorzystywanie fragmentów tej książki do przedruków w gazetach i czasopismach, w audycjach radiowych i programach telewizyjnych bez pisemnej zgody Wydawcy jest zabronione. Nazwa serii zastrzeżona w UP RP

Kalkomania dołączona do niniejszej publikacji stanowi integralną część książki i nie może być sprzedawana oddzielnie

Cena detaliczna: 20,00 PLN

KAGERO

BM-13N Katyusha on ZIS-6

Katyusha – the legendary Russian weapon of World War II. Despite notable inaccuracy of fire, the massive barrages of rocket missiles launched from *Katyushas* proved devastating to the enemy, both physically and psychologically. Their concentration of fire on a relatively small area and the distinctive, terrifying sound of rockets leaving en masse launch rails, invariably struck terror among German infantrymen.

Katyusha owns its name to a popular wartime song of the same title. It's a Russian diminutive of a female name Katherine. Germans called the feared weapon the "Stalin's Organs". *Katyusha* was a common name of all Russian launchers of unguided rocket missiles, including BM-8 launchers firing 82 mm projectiles, BM-13 with 132 mm missiles, and BM-31 armed with powerful rockets of 310 mm in calibre. These launchers were coupled to a variety of mobile carriers, or even fired from the ground, from simple launching racks.

The design work on the new type of rocket weapon commenced as early as 1938. The finial prototype was finished three years later. The ZIS truck-mounted launcher was armed with 24 missiles of 132 mm in calibre, arranged in two rows and held on studs fixed to the rocket bodies. Initially the launcher was mounted crosswise to the longitudinal axis of the vehicle and the missiles loaded from the front of the rack. Many subsequent improvements were incorporated to the design, notably providing it with a certain arc of fire and aligning the launcher with its carrier's longitudinal axis. The improved version had its rockets loaded from behind.

So modernised weapon was designated BM-13 (BM-*Bateriejnyj Minomiot*: battery mortar) and went into production in the spring of 1941. Further development of the original concept led to creation of BM-8 launcher fitted with three rows of much shorter launch rails, which could be loaded with up to 48 M-8 type 82 mm rocket missiles. In 1942 Russians developed a version of the M-13 rocket with a larger, bulbous warhead – the M-30. Unlike the other two types, the M-30 was fired from static *rama* (frame) launchers, which also served as the packing crate. In 1944 they phased out in favour of self-propelled BM-31 launchers.

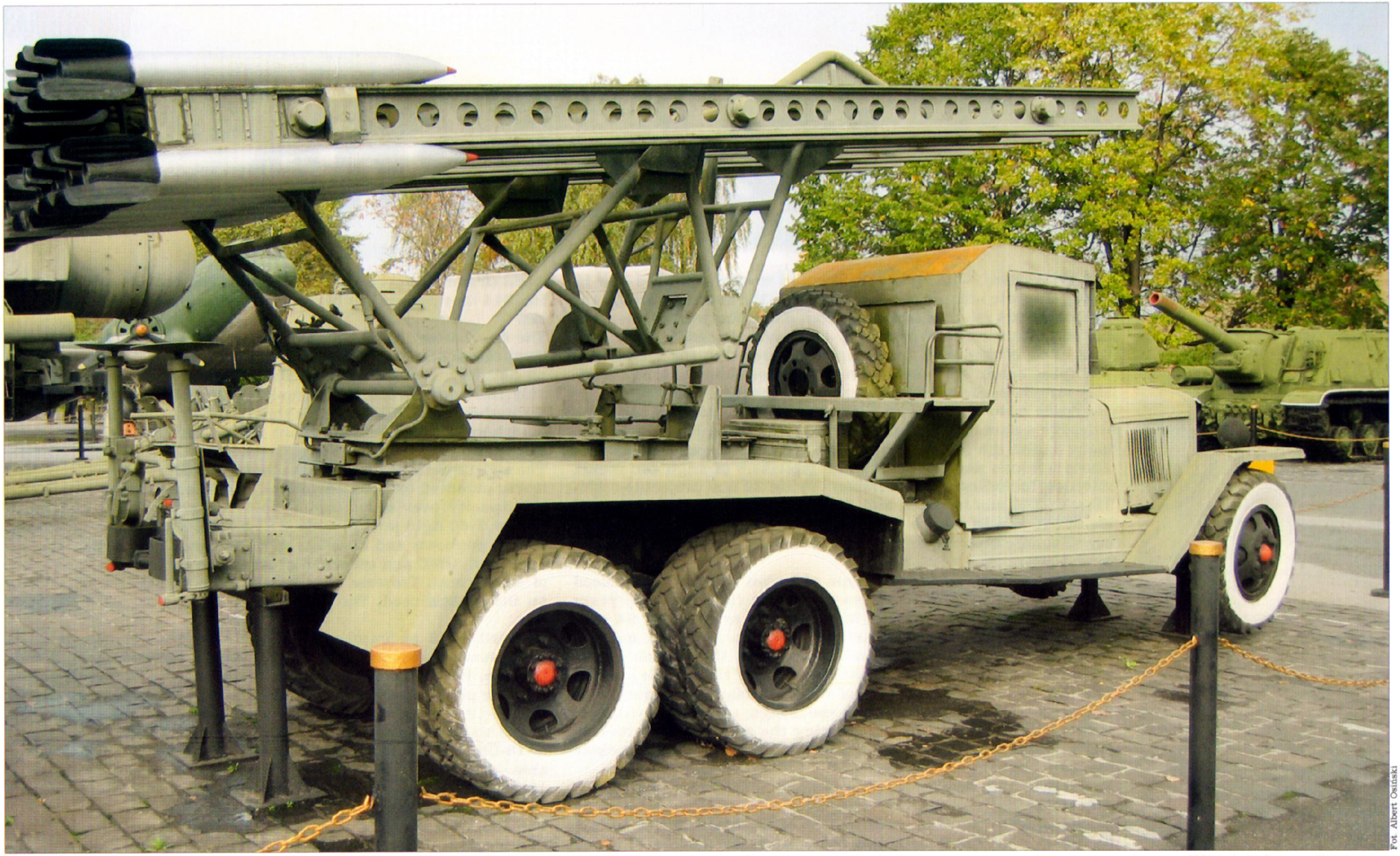
The first battery of *Katiushas*, commanded by Capt. I. Flerov and comprising seven mobile launchers, was despatched to the front on 1st July 1941. They were first committed to battle on 14th July 1941 near Orsha in Belarus. They remained in active service throughout the WWII and beyond. In the Polish Army BM-13 launchers equipped independent rocket artillery regiments and brigades.

The BM-13 launcher was adaptable to just about any chassis, and it was mounted on both Soviet and Lend-Lease trucks with a cargo capacity over a ton and a half, including ZIS-5 and ZIS-6 trucks, T-60 light tank chassis, STZ-5 artillery tractors, armoured trains, gunboats and a variety of Lend-Lease trucks: Studebaker, Chevrolet, GMC and others. Elevation was limited to a maximum of 45 degrees. Traverse was either 10 or 20 degrees depending on the chassis used. The sight was a MP41 type, used for mortars.

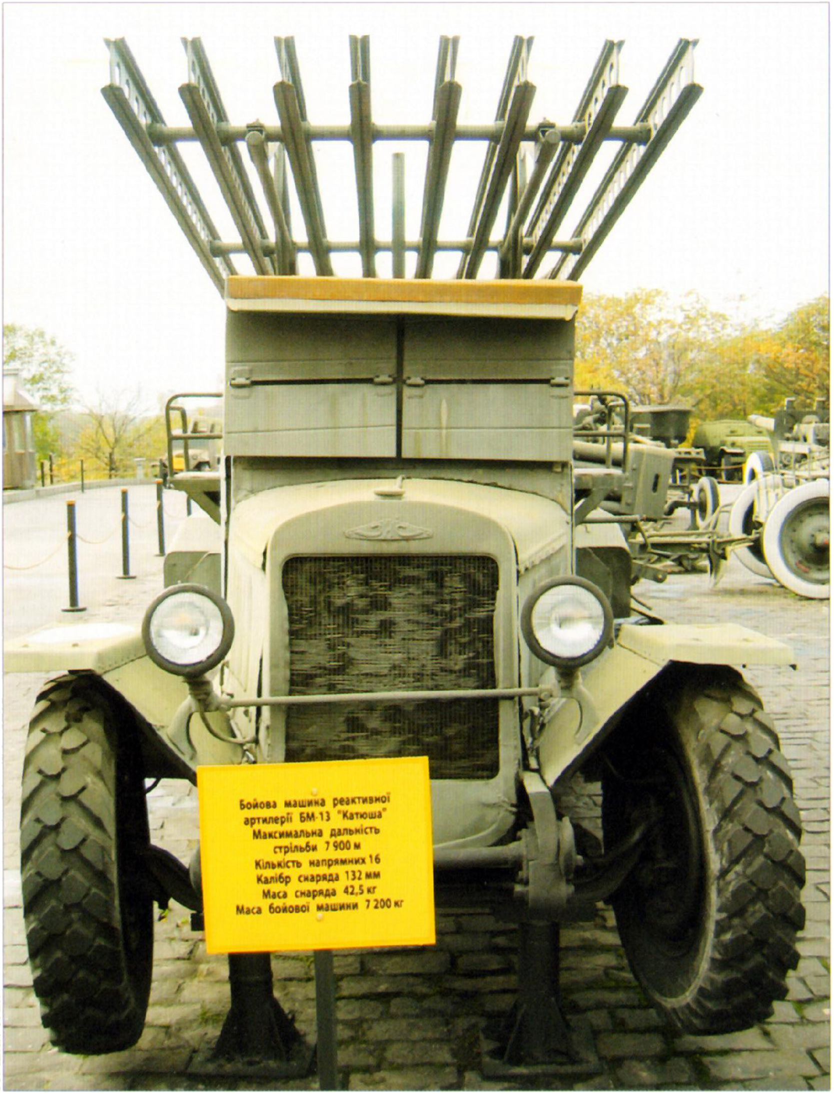
In April 1943 an improved BM-13N (N-*normalizovanniy*: standard) version was developed, which also became the most numerous one. It was produced in Komitern factory in Voronezh and in Moscow plant "Kompressor". Also the high explosive fragmentation M-13 projectiles underwent some modifications. By the end of the war two more versions were pressed into service, namely M-13-UK – which gave an increased dispersion to cover a wider area – and the later M-13-DD, which gave the rockets a range of up to 11 kilometres. Projectiles with fragmentation-incendiary warheads were also in use.

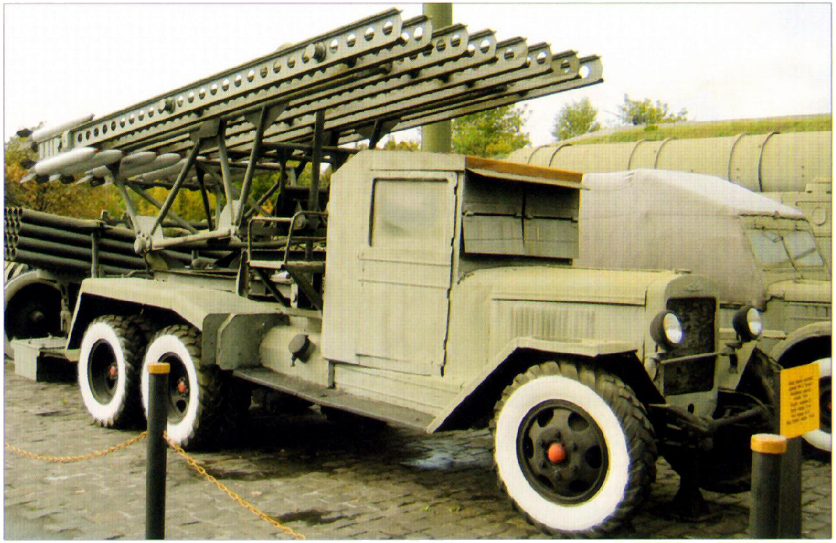
The BM-13 launcher was capable of firing 16 missiles in 10-12 seconds. It could be prepared to fire in 2-3 minutes after arriving at the assigned location and re-loaded in 5-10 minutes. *Katyushas*, moving around at the speed of 50-60 kph, were also a highly mobile weapon.

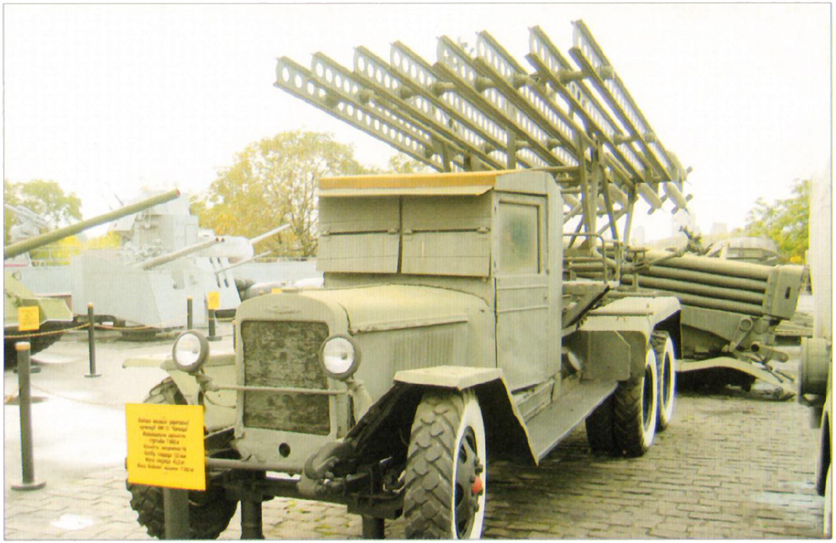
Albert Osiński



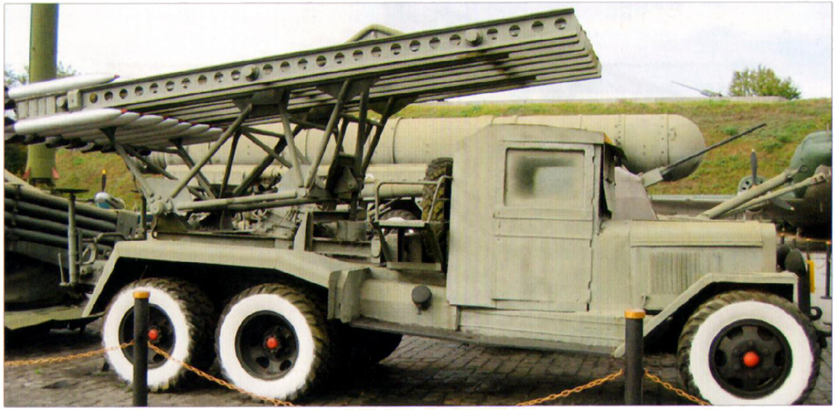
The mobile multiple rocket launcher BM-13N ('BN' standing for boyevaya mashina – combat vehicle), commonly known as Katyusha, mounted on a ZIS-6 truck, on display in museum of the Great Patriotic War in Kiev, Ukraine • Wyrzutnia rakiet niekierowanych BM-13N (bojewaja maszina – wóz bojowy) Katiusza na samochodzie ZIS-6 zachowana w muzeum Wielkiej Wojny Ojczyźnianej w Kijowie na Ukrainie



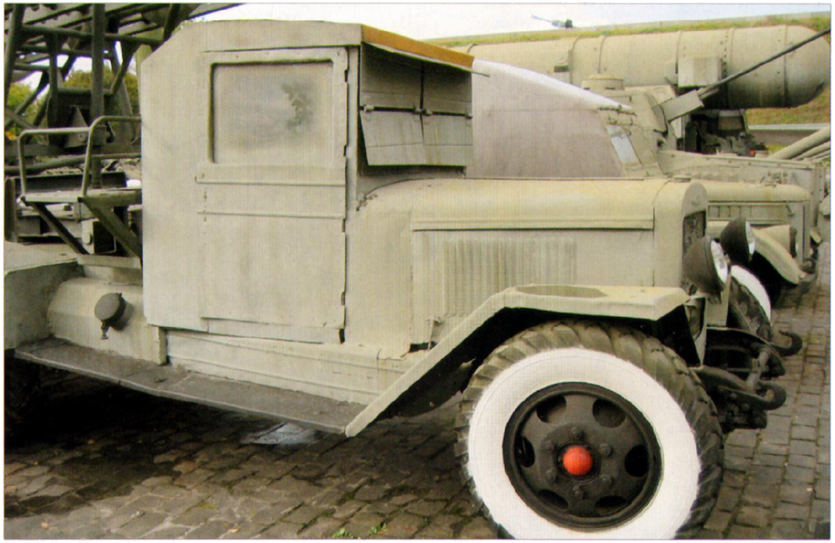


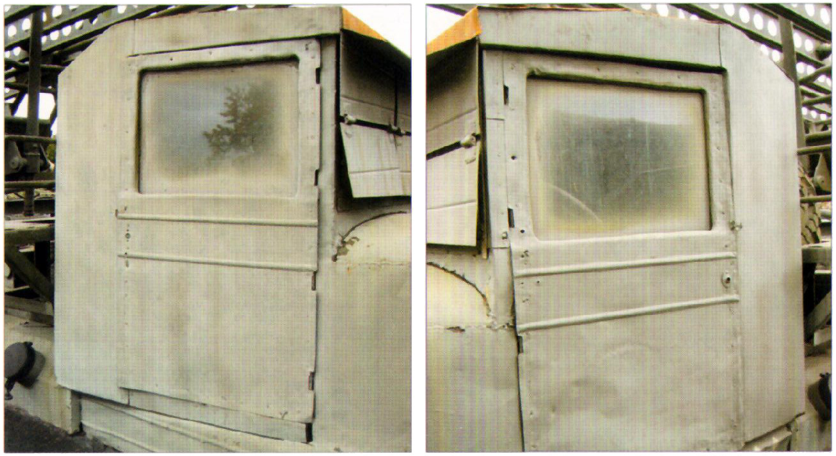


Fot. Albert Osiński

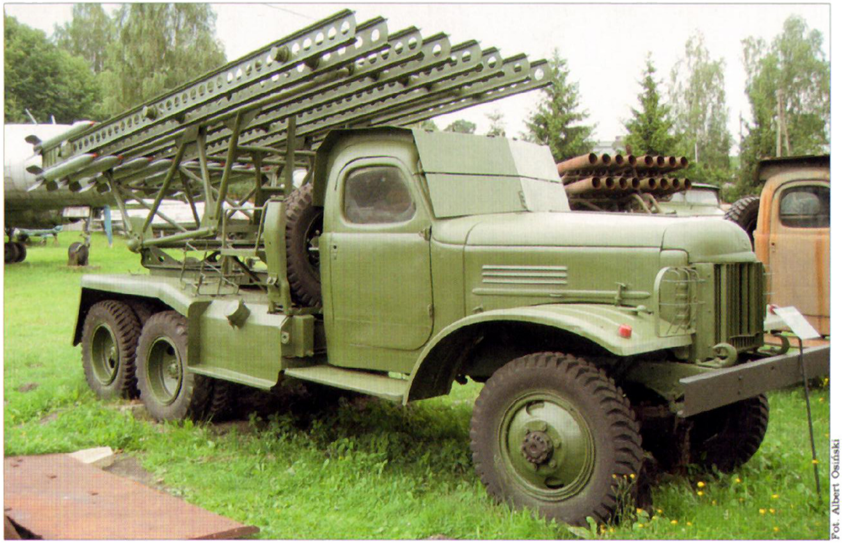


The vehicle presented in this set of photos is fitted with late-production launcher, which differed from earlier types in the construction of the rack of launch rails. The rear part of the vehicle comes from ZIS-151, which also frequently carried BM-13N launchers • Prezentowany egzemplarz posiada wyrzutnię późnego typu. Różniła się ona od wczesnego typu wyrzutni konstrukcją kratownicy. Tylna część pojazdu pochodzi z ZISa-151, na którym również były montowane wyrzutnie BM-13N

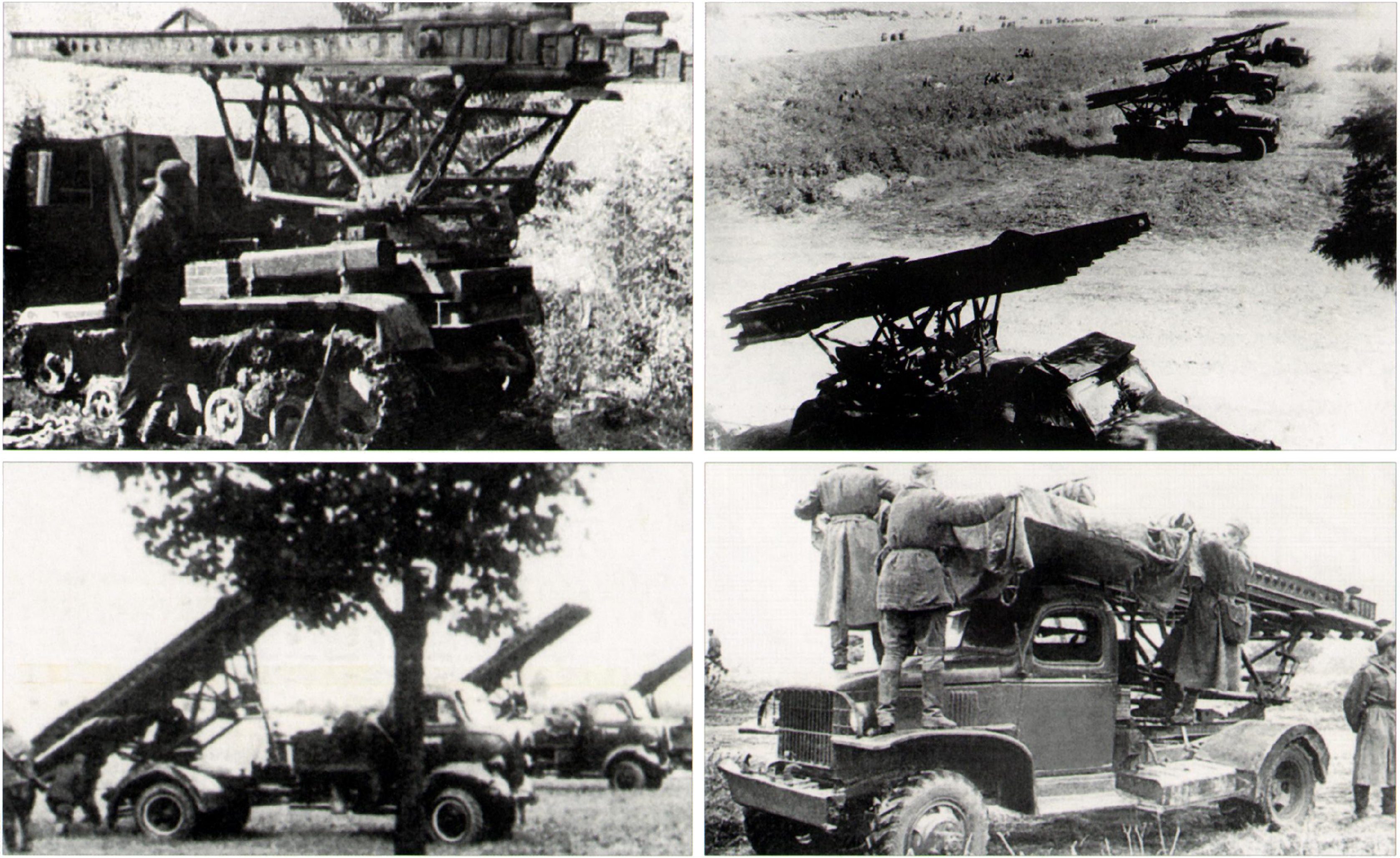




Driver's cab with characteristic slanted roof, typical of vehicles coupled to BM-13 launcher. Such modification of the roof was necessitated by the construction of the rack • Kabina z charakterystycznym dla pojazdów z zamontowaną wyrzutnią BM-13 ścięciem dachu. Wynikało ono z konstrukcji kratownicy wyrzutni

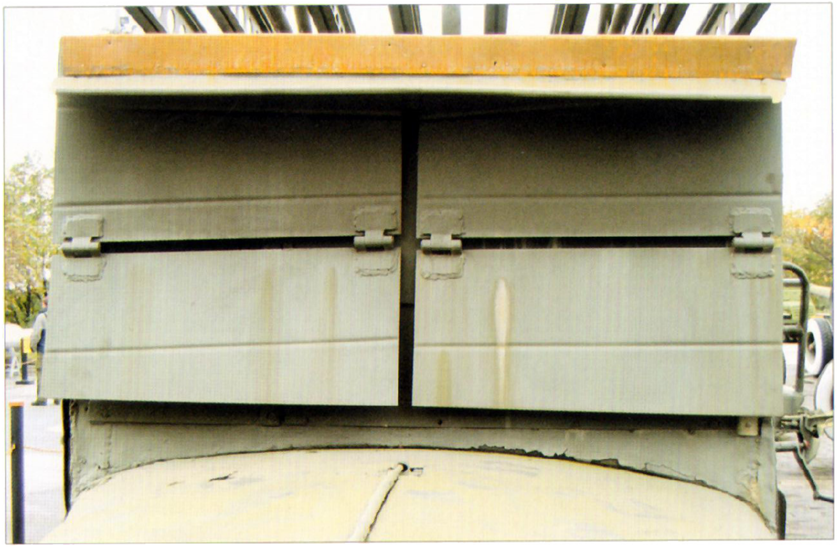


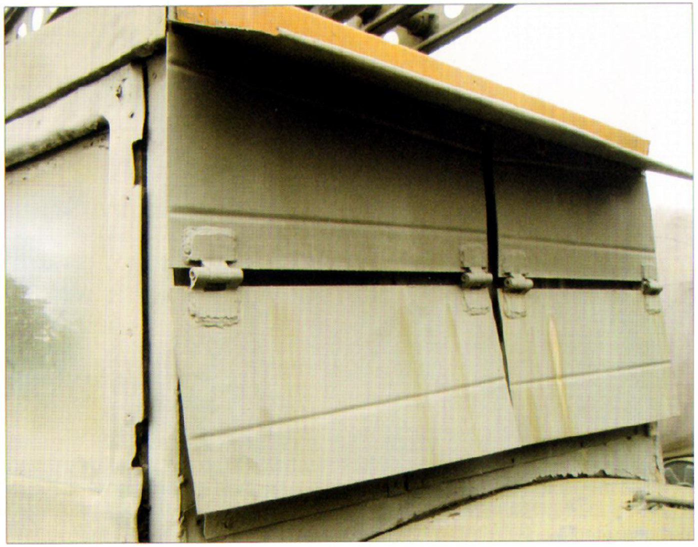
Fot. Albert Osiński



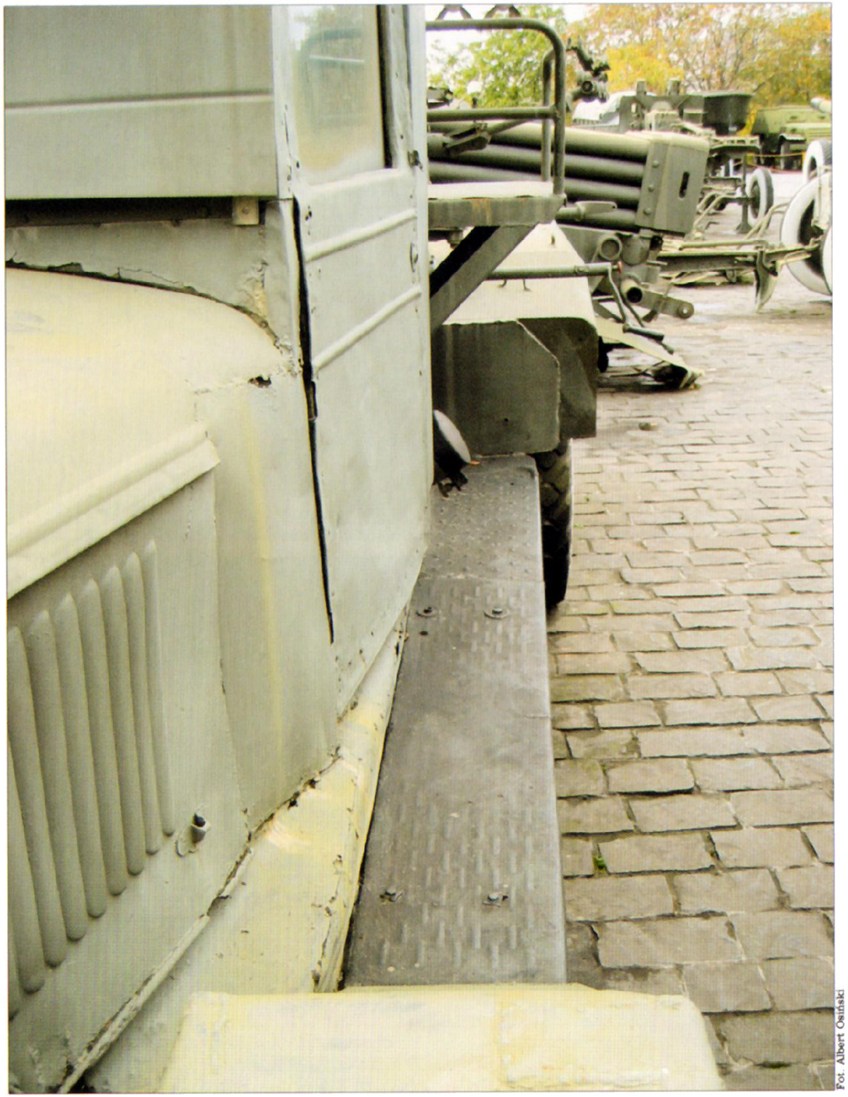
Fot. Arch.

The unguided rocket launchers of BM-13 were mounted on all sorts of chassis. Most commonly used were modified ZIS Russian trucks, prime-mover STZ-5, as well as Lend-Lease vehicles, notably 1.5 ton Chevrolets, Ford, US-6 or GMC Studebakers • Wyrzutnie rakiet niekierowanych BM-13 montowano na wszelkiego rodzaju podwoziach. Najczęściej były to dostosowane do tego ciężarówki ZIS, ciągniki STZ-5 oraz pochodzące z Lend-Lease: Chevrolety 1,5t, Fordy, Studebakery US-6 lub GMC

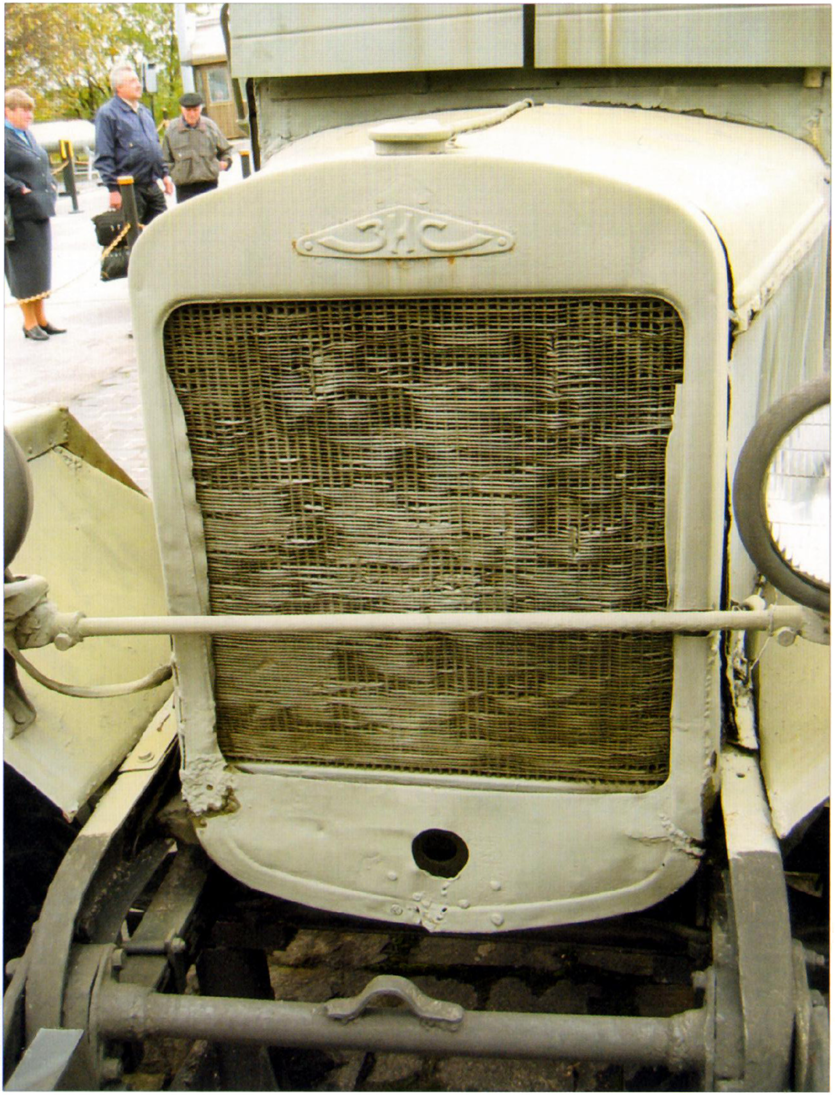




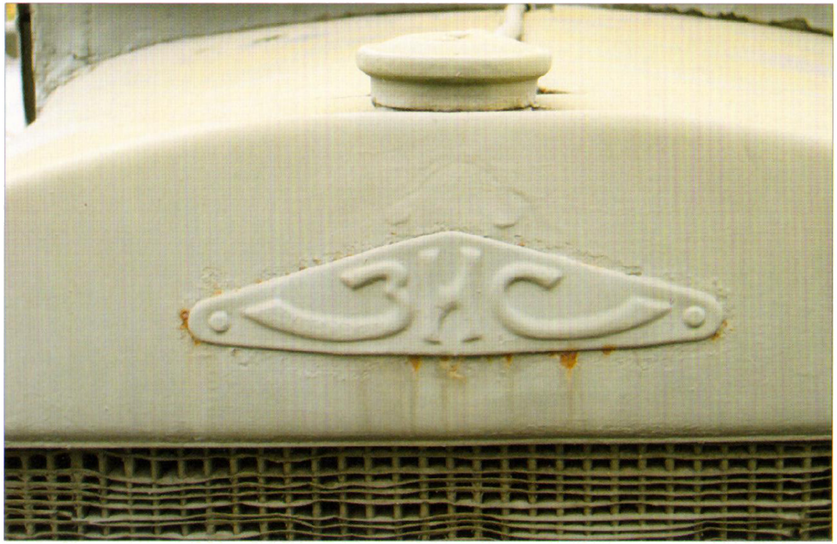
Folding panels which shielded drivers cab's glazing during firing rockets • Osłony kabiny rozkładane podczas prowadzenia ostrzału

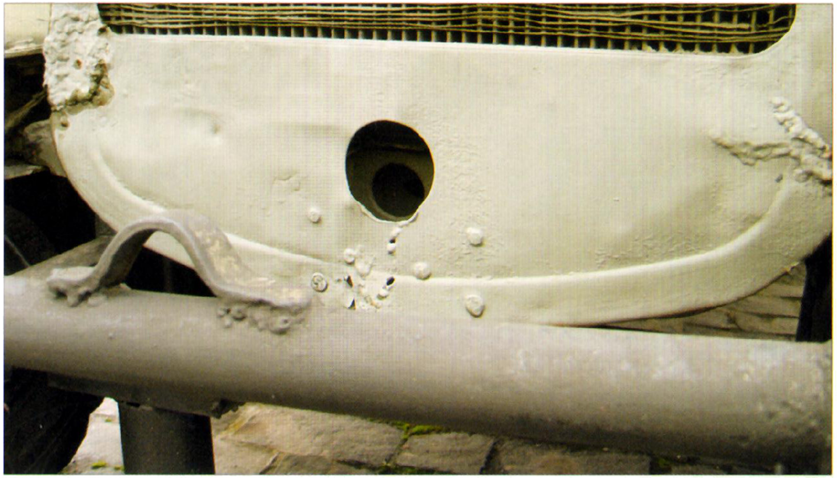


Fot. Albert Osiński

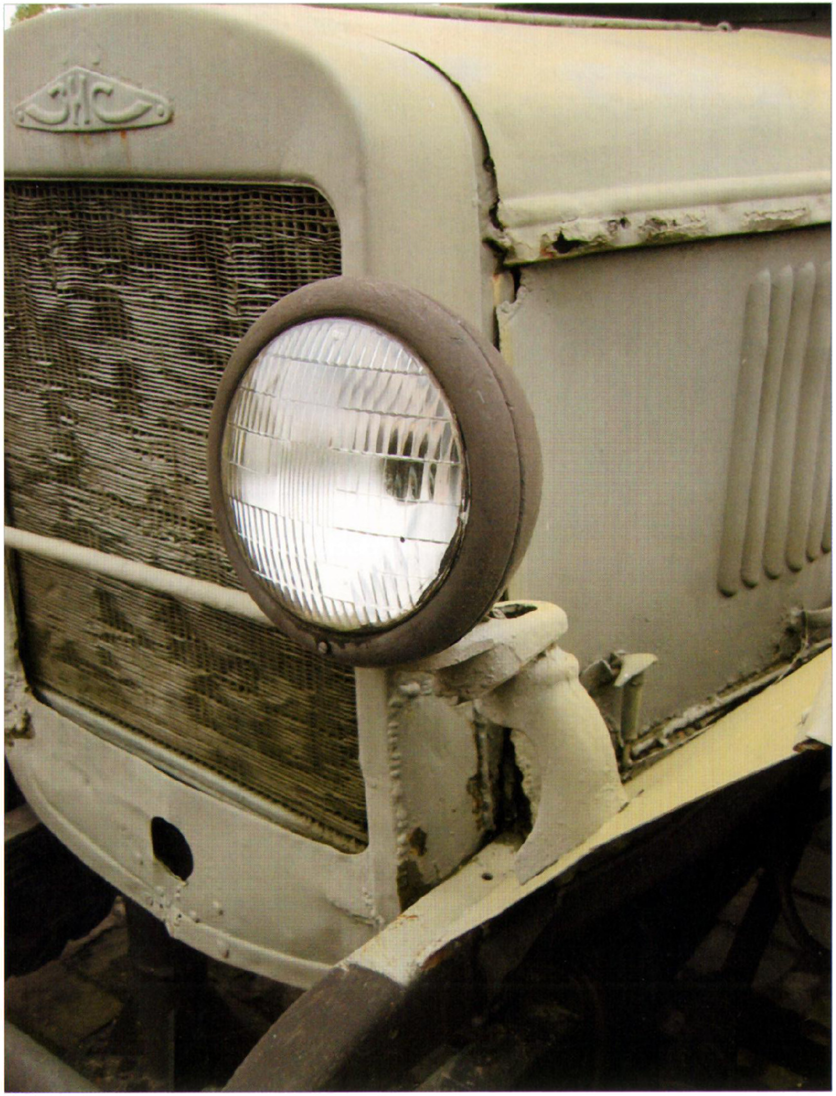


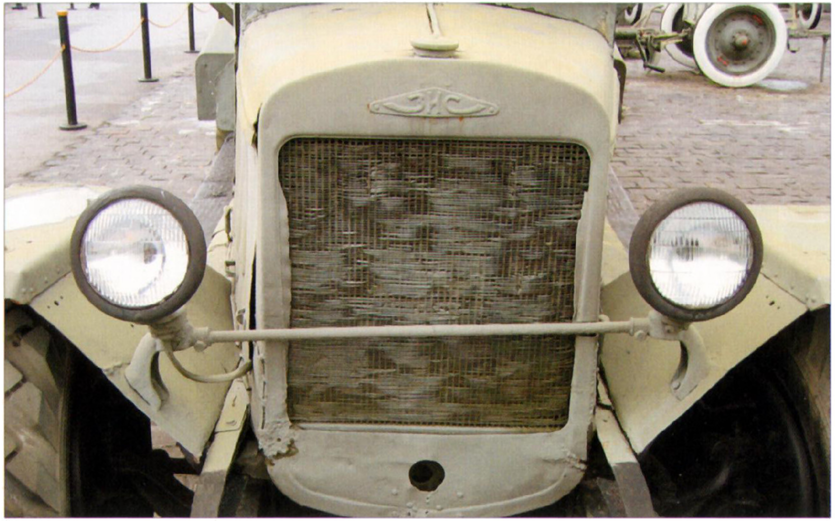
Fot. Albert Osiński



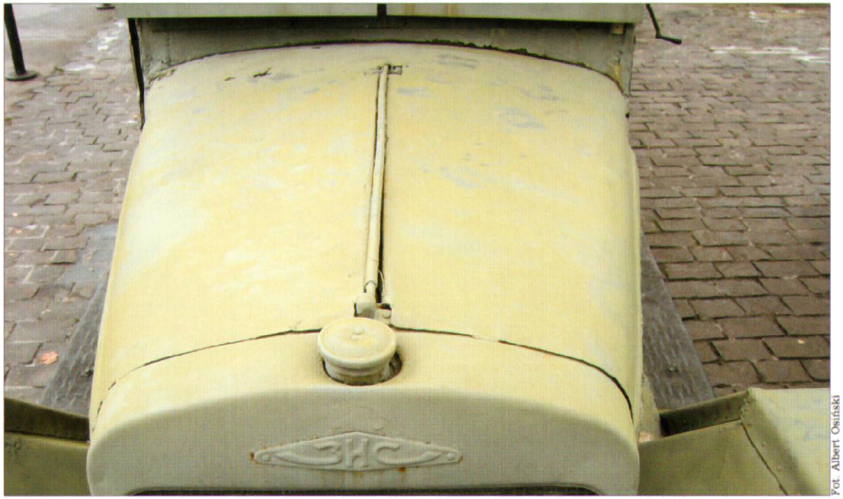


Mesh radiator grille. Note the “ZIS” emblem above the grille and the starter cranking point below • Osłona chłodnicy ze znakiem firmowym ZIS. Otwór w dolnej części to miejsce na korbę rozruchową





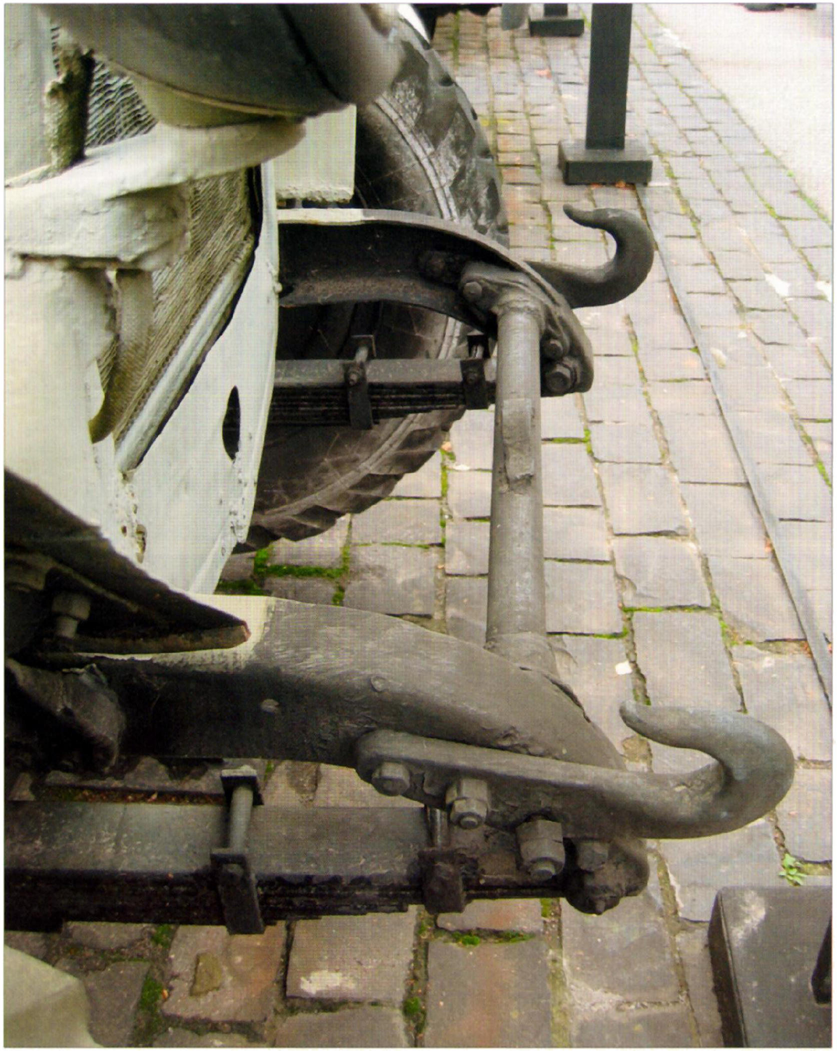
Headlights • Reflektory przednie



Fot. Albert Osiński

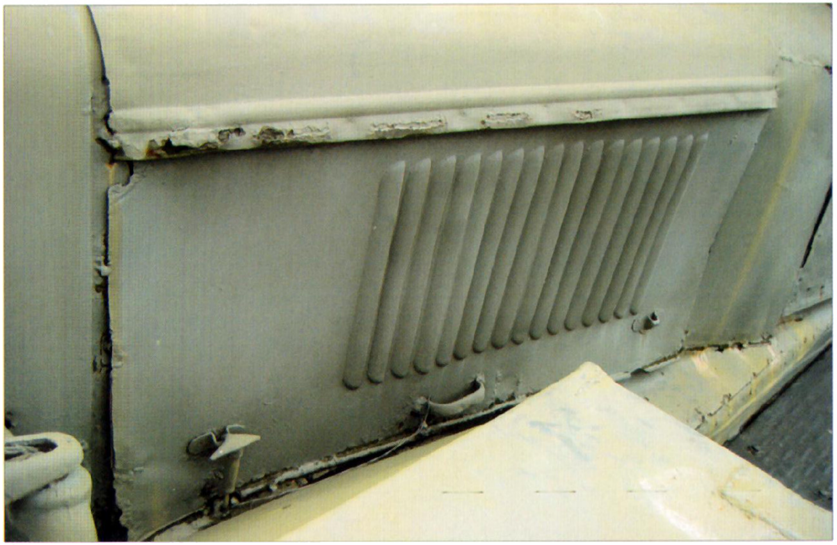
Bonnet comprising two covers hinged in the centre to open from either side. In the foreground the oil filler point • Maska silnika. Na jej końcu wlew do zbiornika chłodnicy

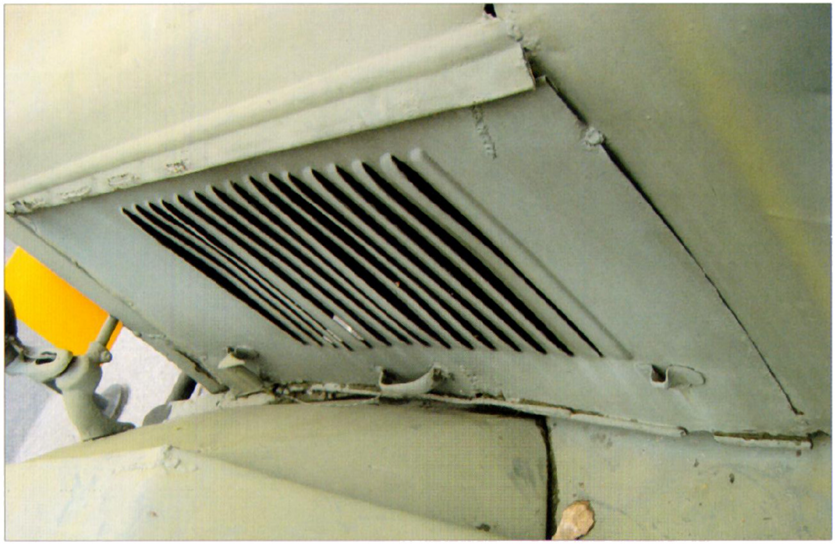
Fot. Albert Osiński

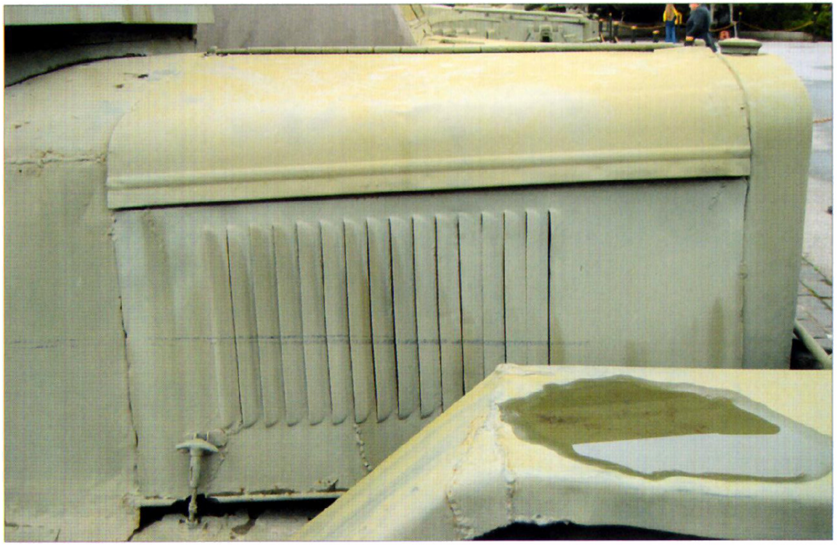


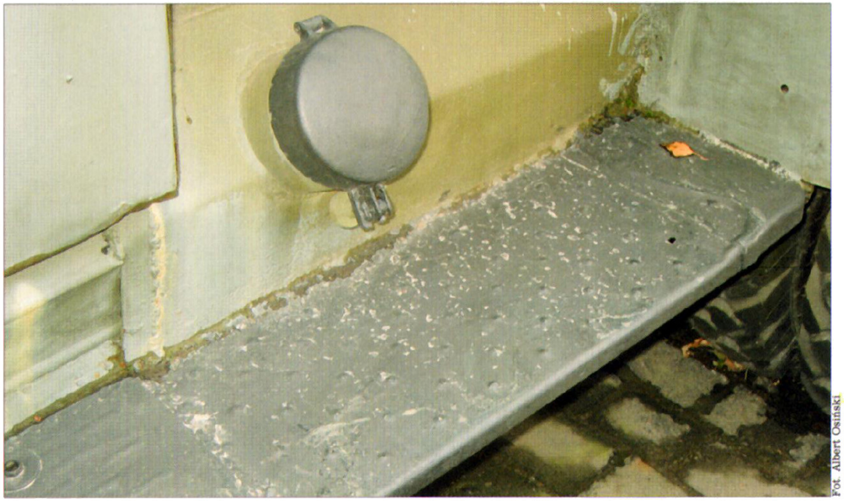
Chassis frame extends from under the engine compartment and is fitted with tow hooks

- Rama pojazdu wysunięta przed maskę pojazdu i zakończona hakami holowniczymi



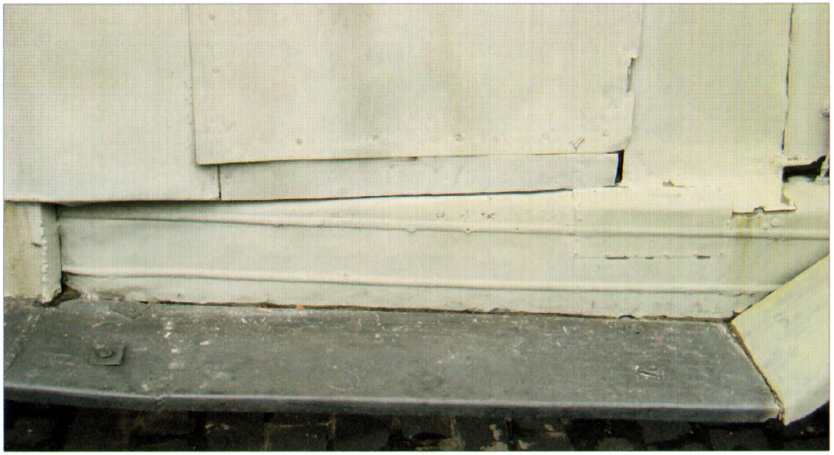




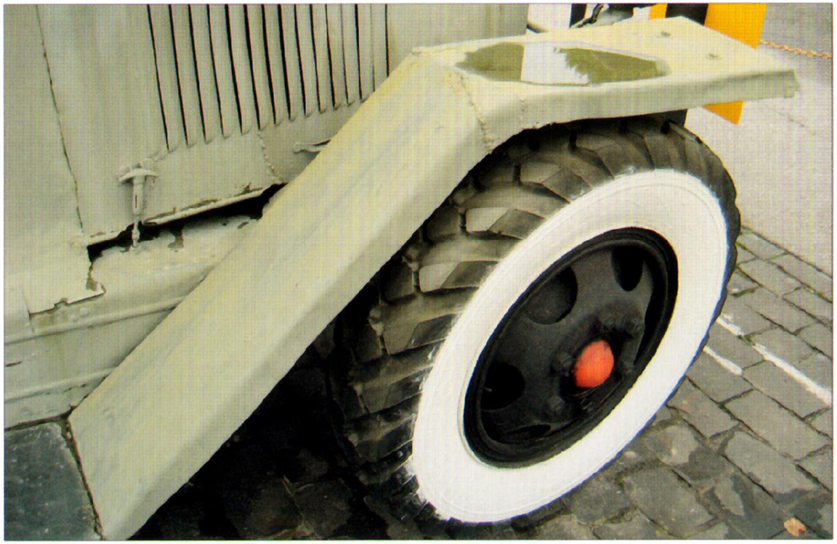


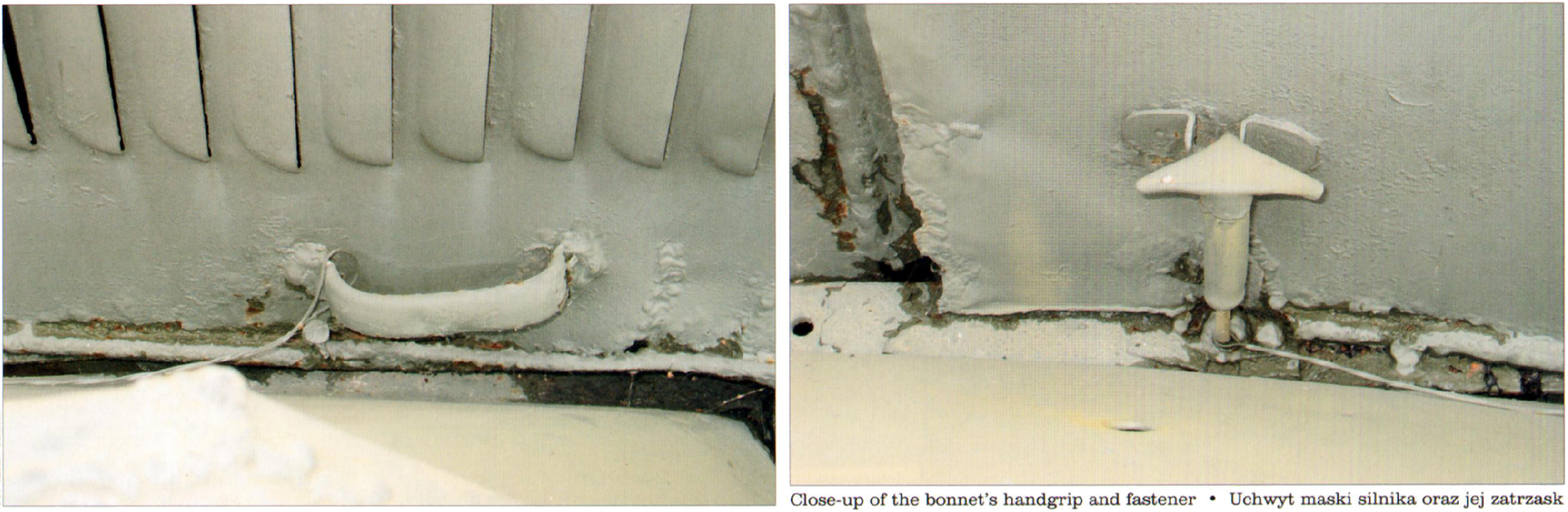
Fot. Albert Osinski

Right and left side of the engine compartment. The fuel filler point is located on the left side • Prawa i lewa strona maski silnika. Wlew paliwa z lewej strony



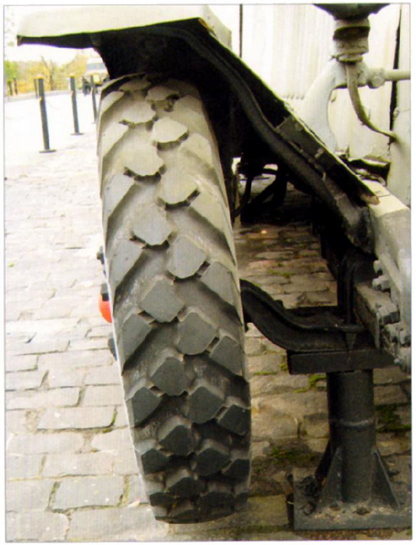
Right side of the driver's cab. Footboard connected with front mudguard. Early ZIS trucks had front mudguards of more rounded shapes • Prawa strona kabiny; stopień wejściowy przechodzący w błotnik. Wczesne pojazdy typu ZIS miały przednie błotniki o zaokrąglonych kształtach

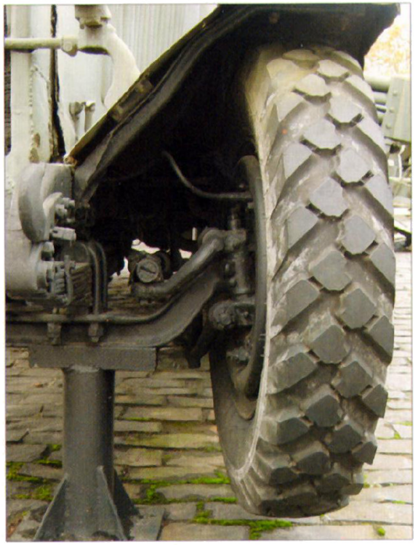


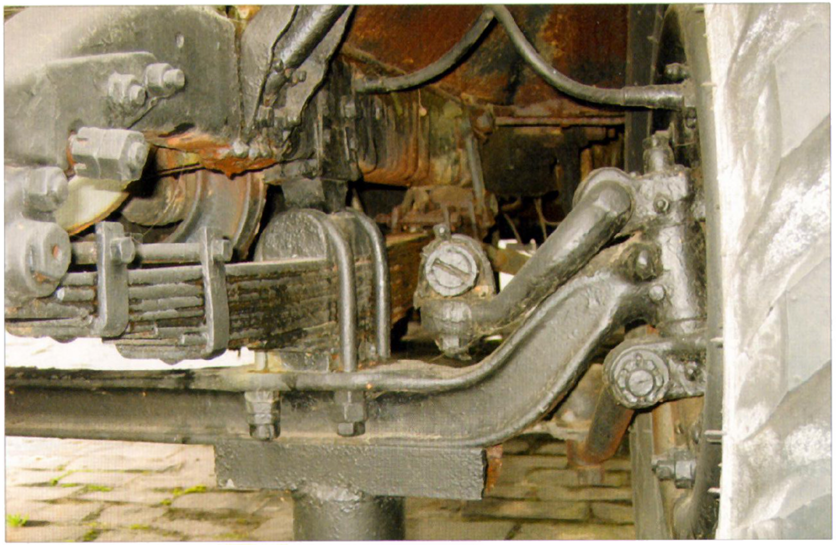


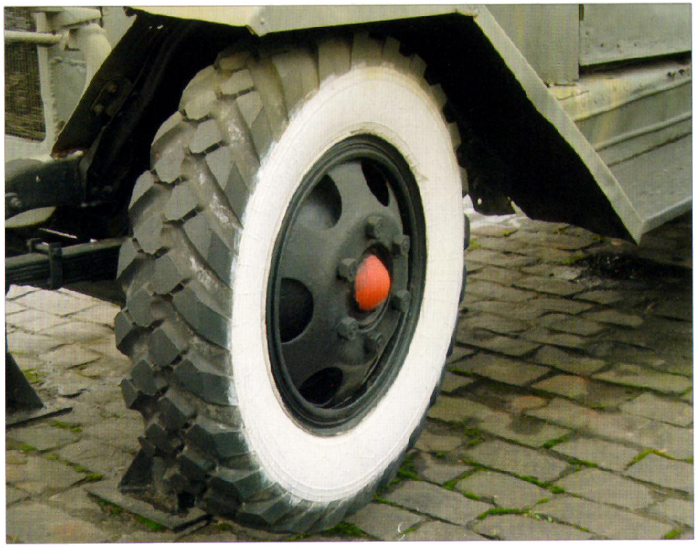
Fot. Albert Osiński

Close-up of the bonnet's handgrip and fastener • Uchwyt maski silnika oraz jej zatrzask

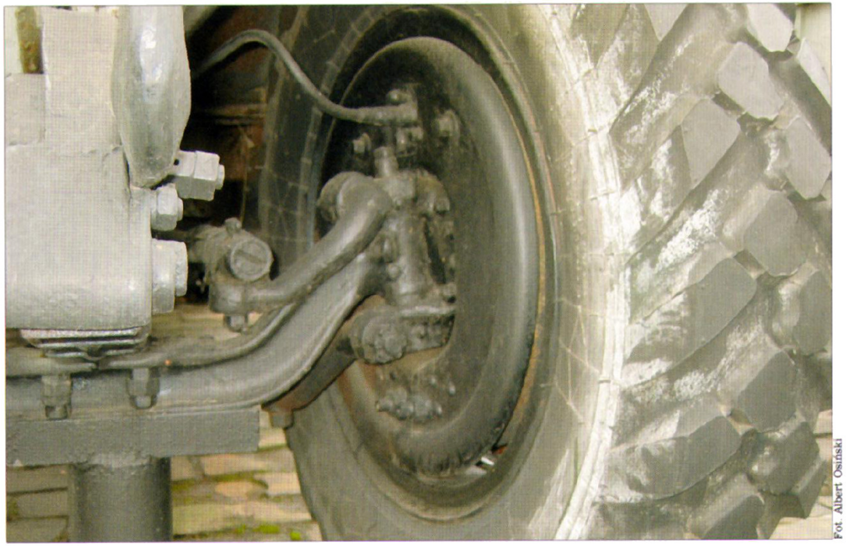




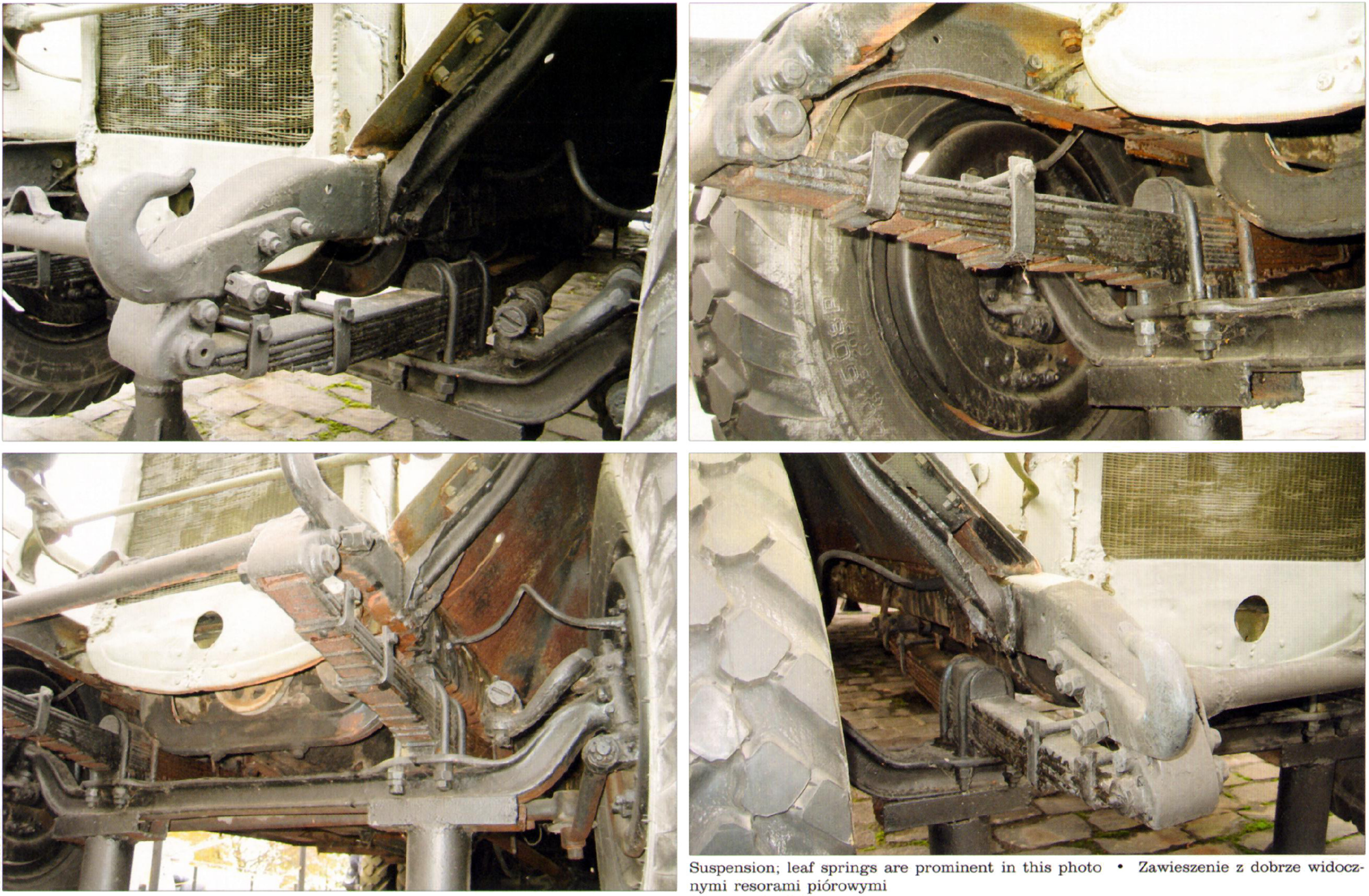




Front wheel and details of the vehicle's suspension • Przednie koło oraz detale zawieszenia

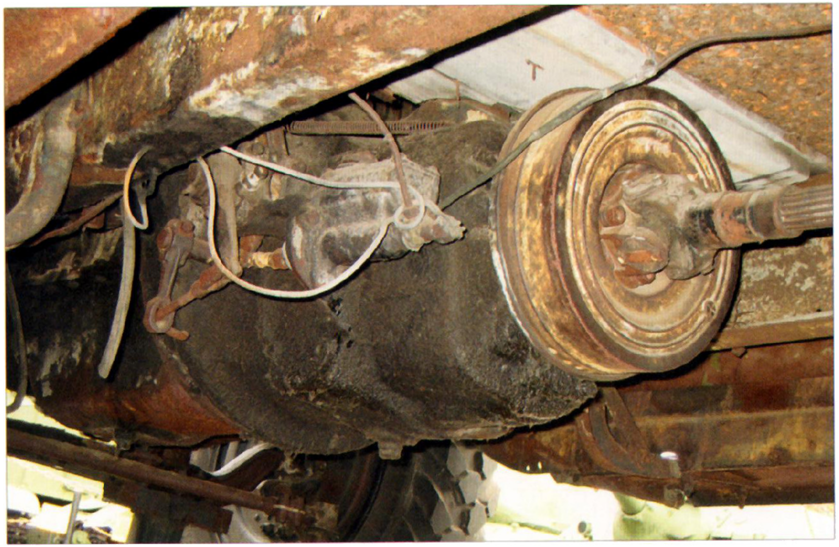


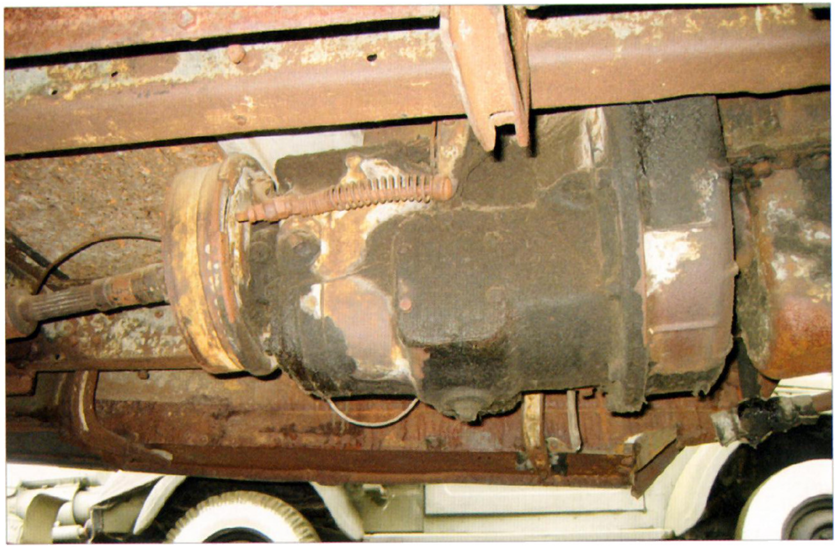
Fot. Albert Osiński

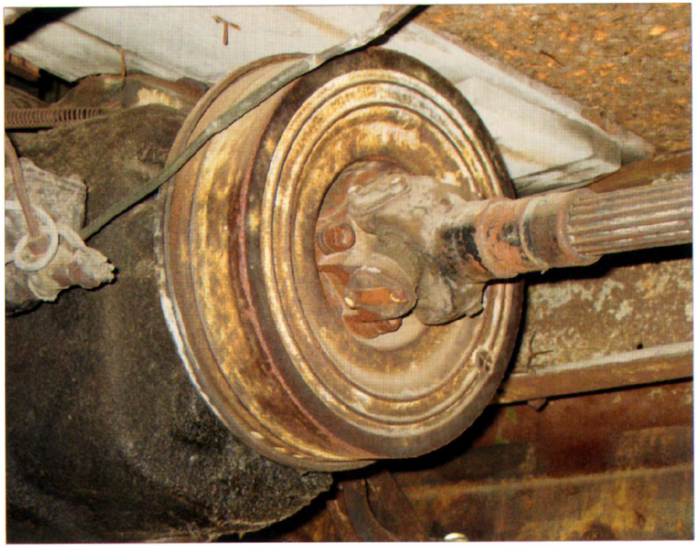


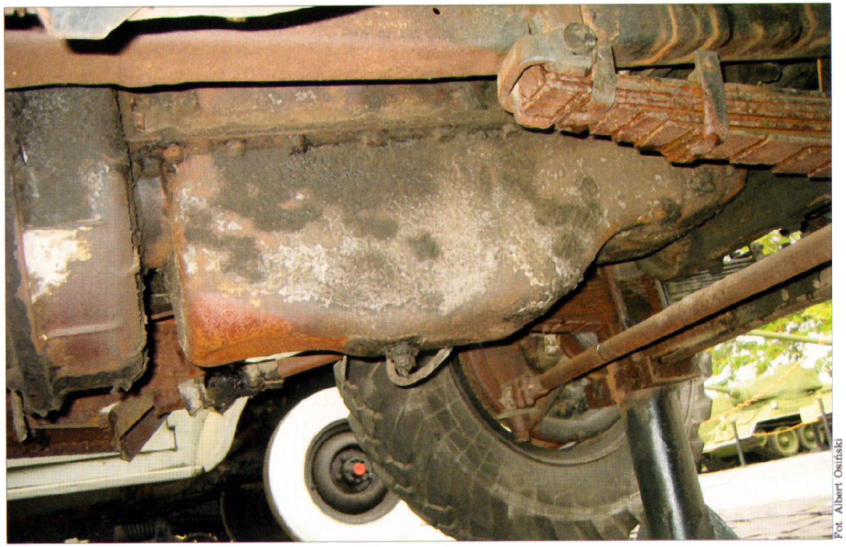
Fot. Albert Osiński

Suspension; leaf springs are prominent in this photo • Zawieszenie z dobrze widocznymi resorami piórowymi



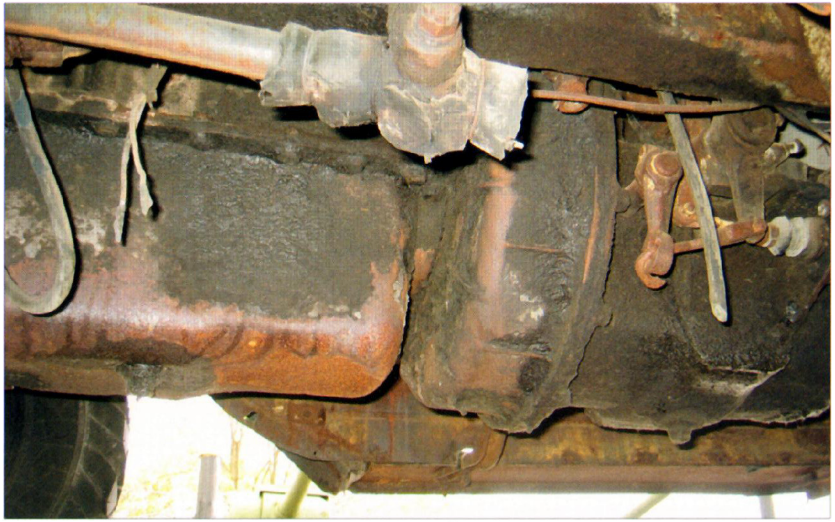




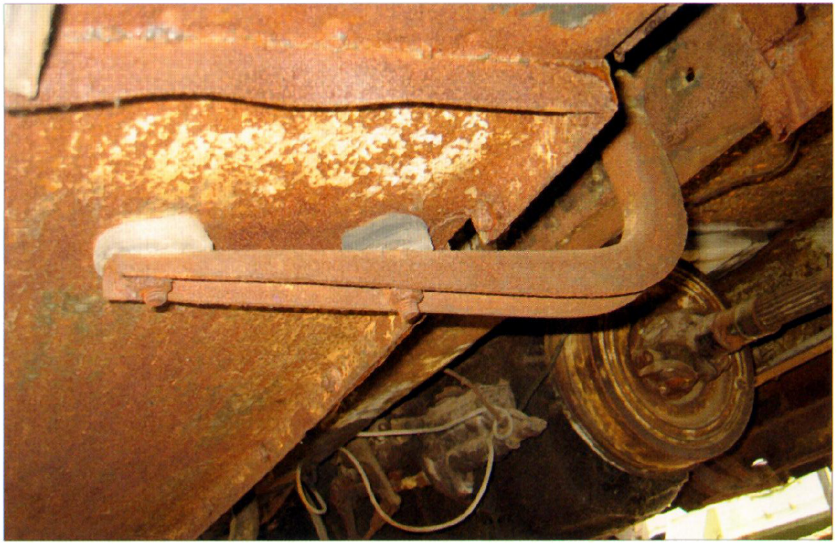


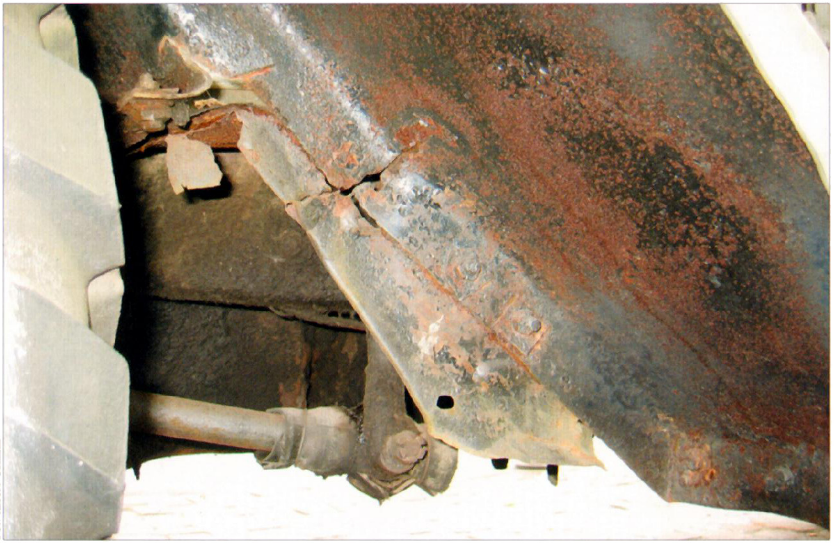
Fot. Albert Osiński

Lower part of the engine and gear box • Dolna część silnika i skrzyni biegów

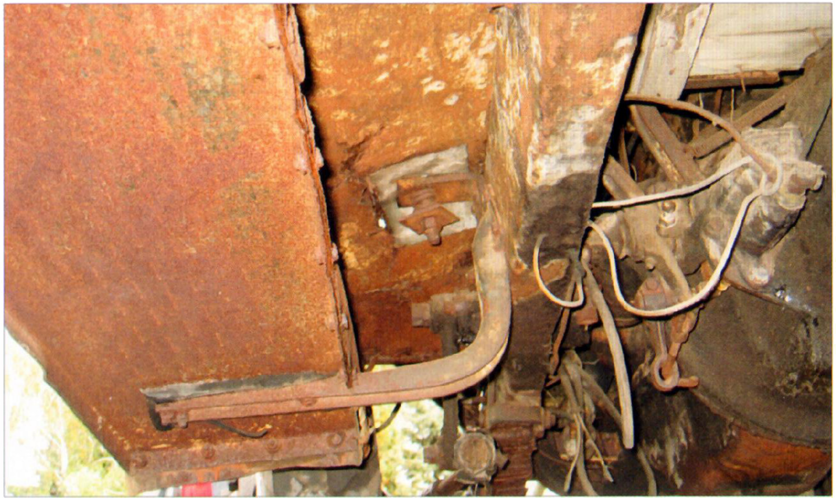


Engine and gear box • Silnik i skrzynia biegów

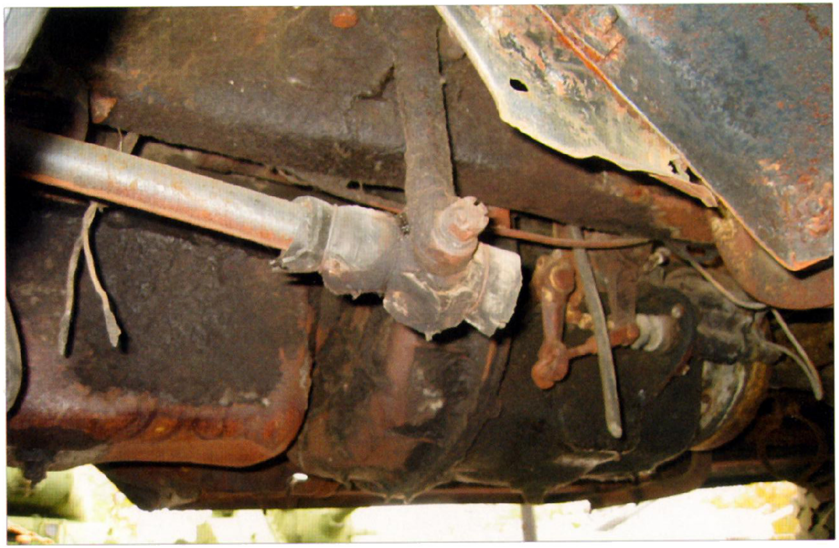


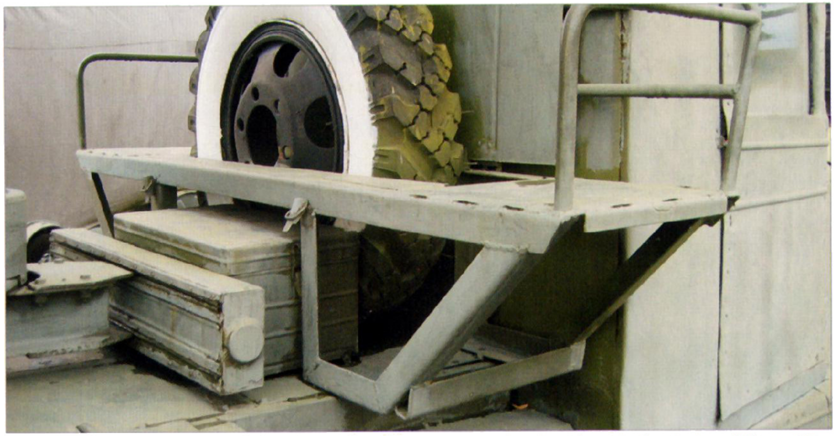


Fot. Albert Osiński

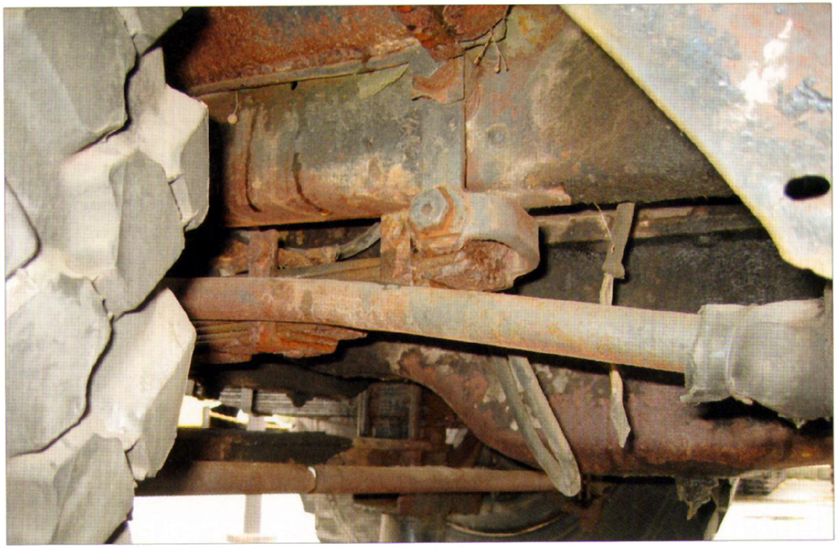


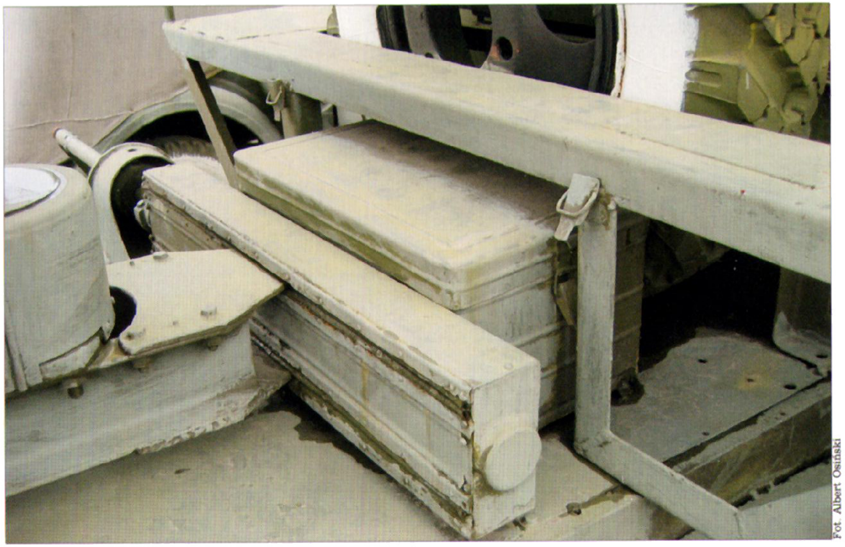
Chassis and the footboard mounts • Rama pojazdu i zamocowanie stopnia wejściowego do kabiny



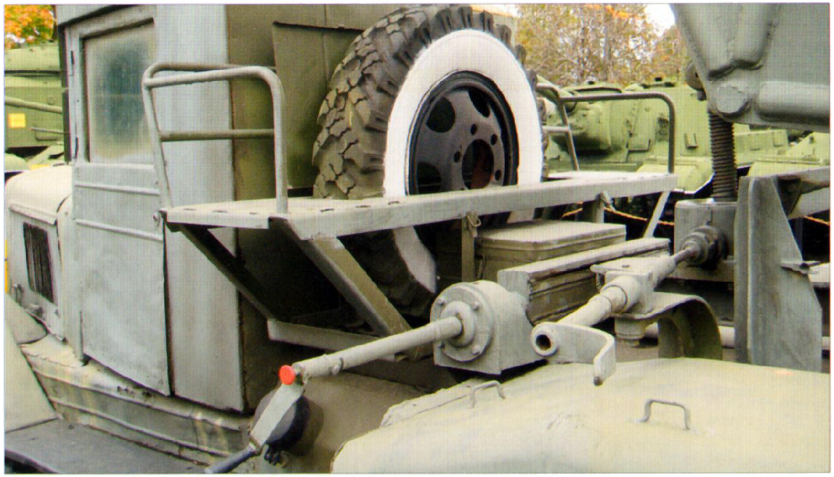


Iron platform behind the driver's cabin with a spare wheel and seats for two soldiers. The box beneath the platform housed the vehicle's battery. Early version of BM-13 launcher mounted on ZIS-6 chassis featured battery box attached to right front mudguard • Platforma umieszczona za kabiną. Pod platformą skrzynia na akumulator. Wczesna wersja BM-13 na ZIS-6 posiadała pojemnik na akumulator na prawym przednim błotniku

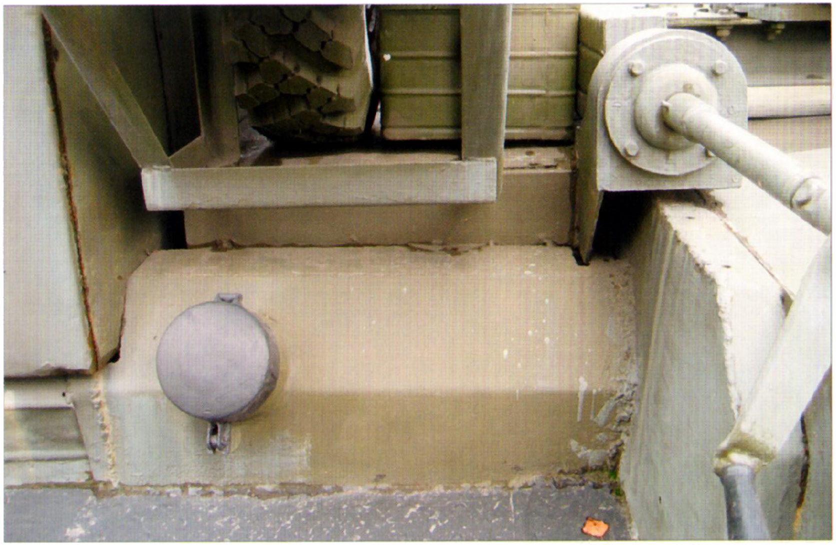


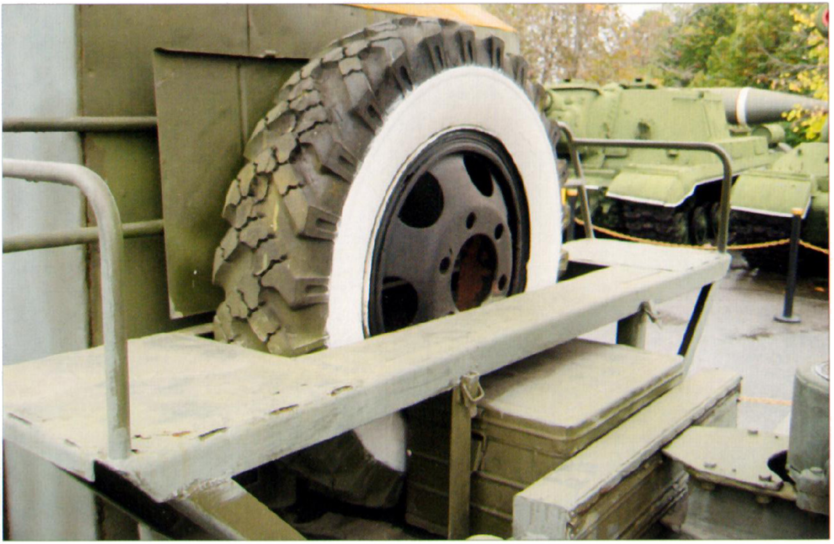


Fot. Albert Osiński

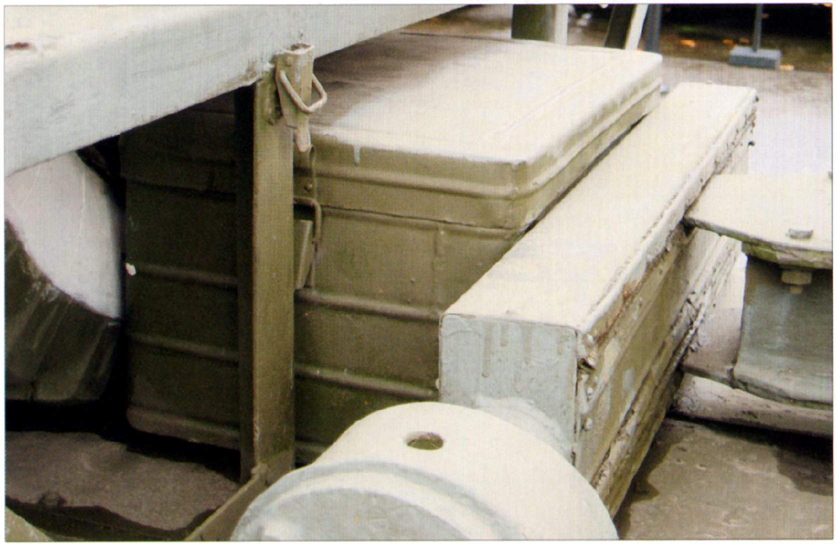


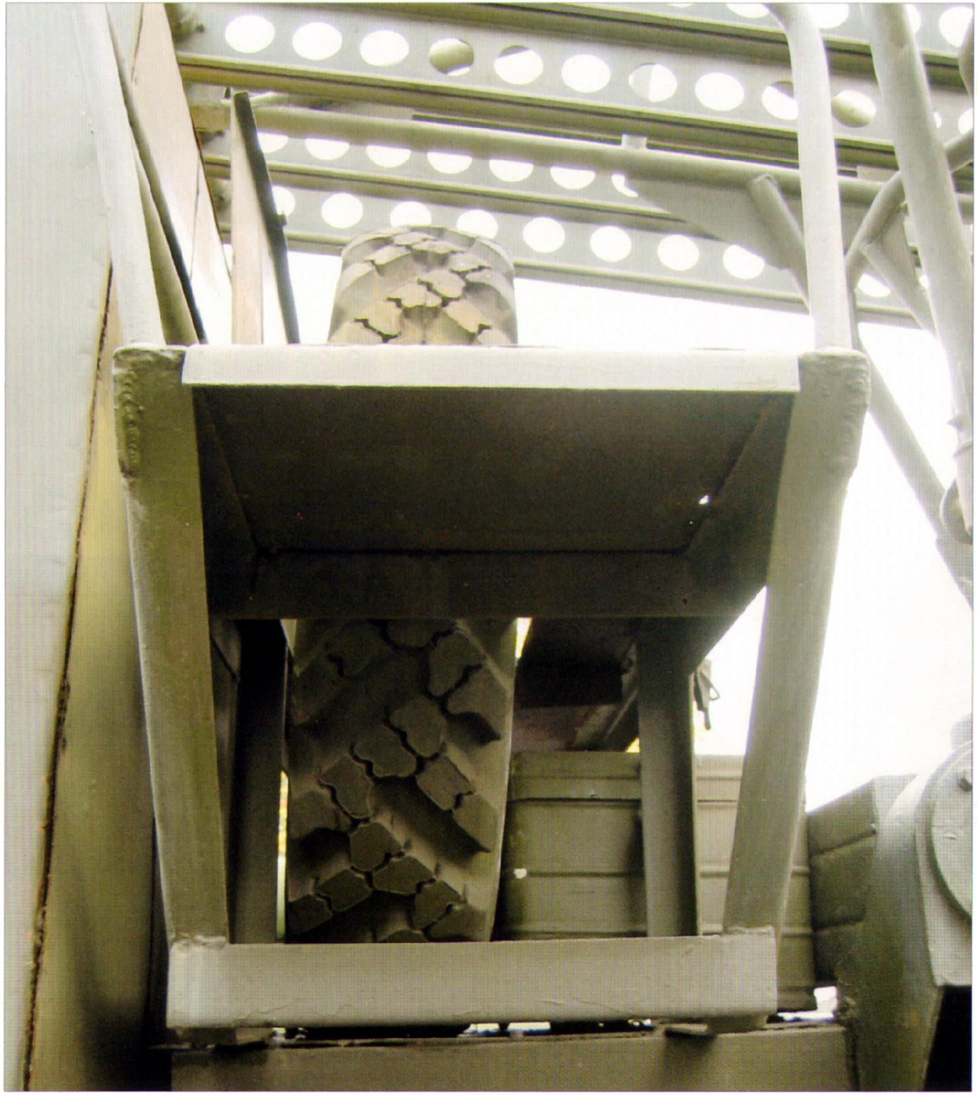
The platform behind the driver's cab viewed from the left. Earlier variants of the Katyusha stored a fuel tank there • Platforma za kabiną widoczna z lewej strony. Starsze wersje Katiusz zamontowane miały w tym miejscu zbiornik paliwa

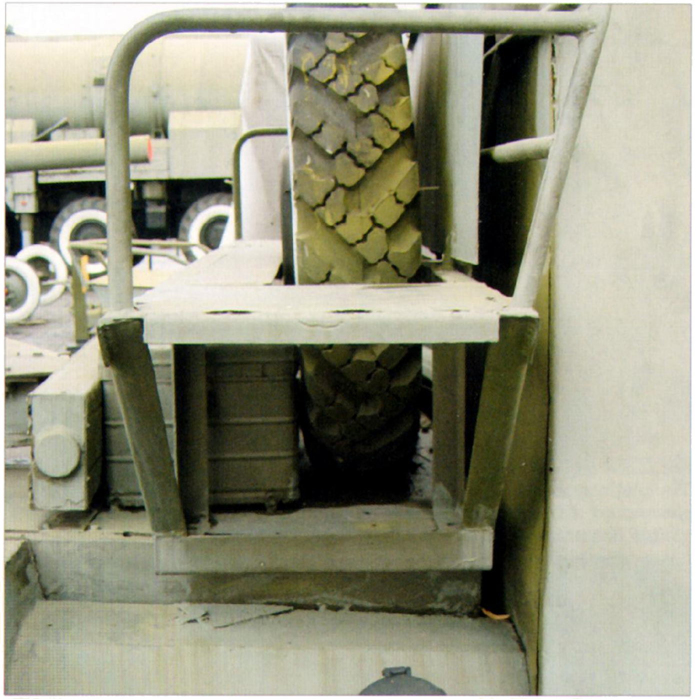


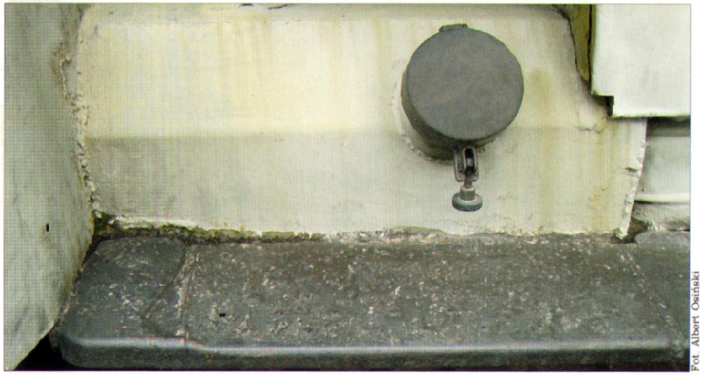


Fot. Albert Osiński



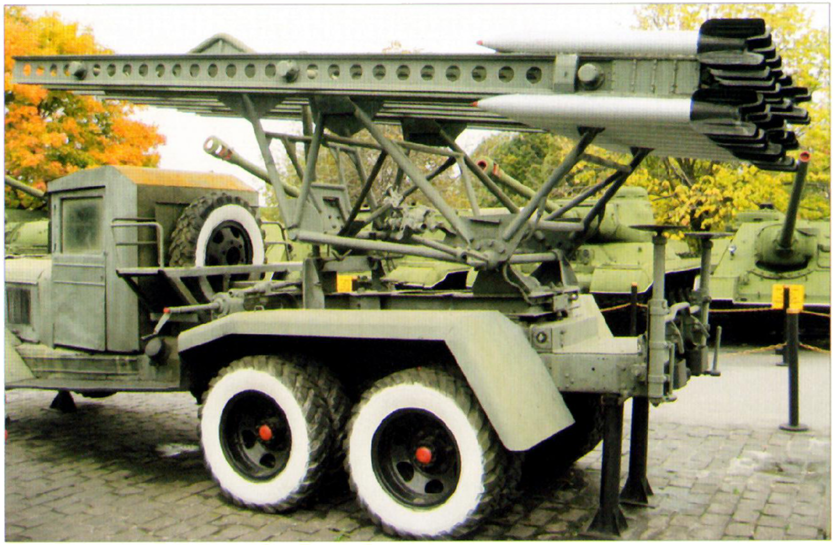


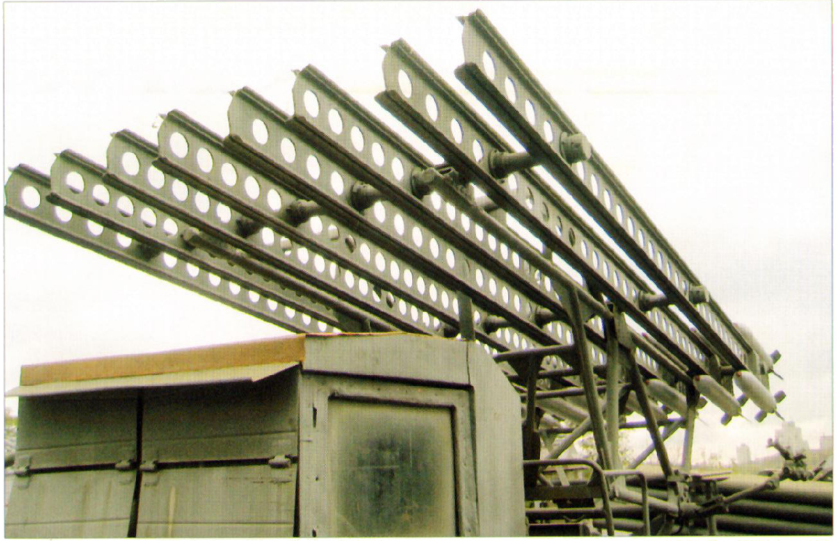


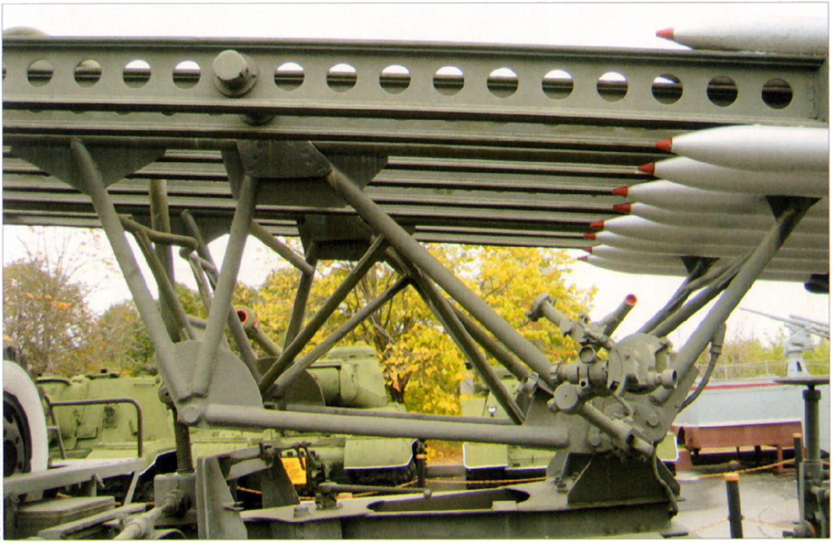


Right fuel tank • Prawy zbiornik paliwa

Fot. Albert Osiński

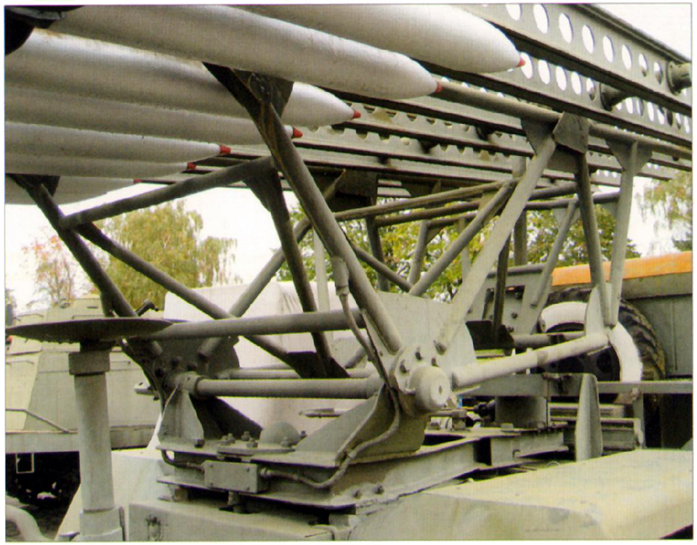


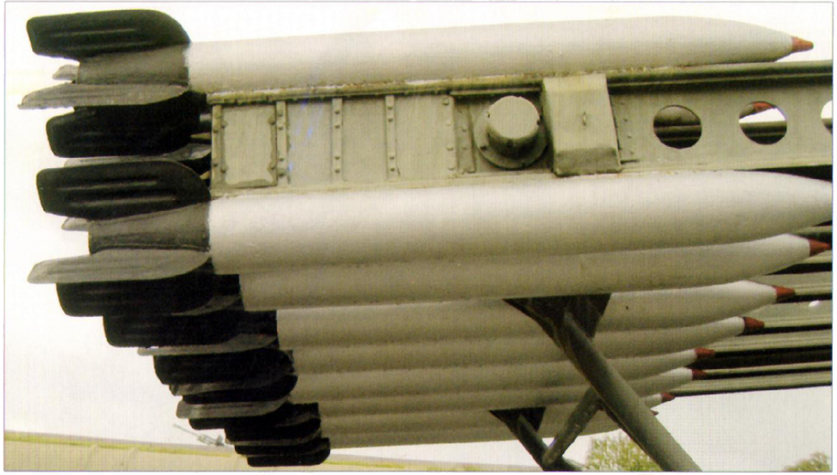




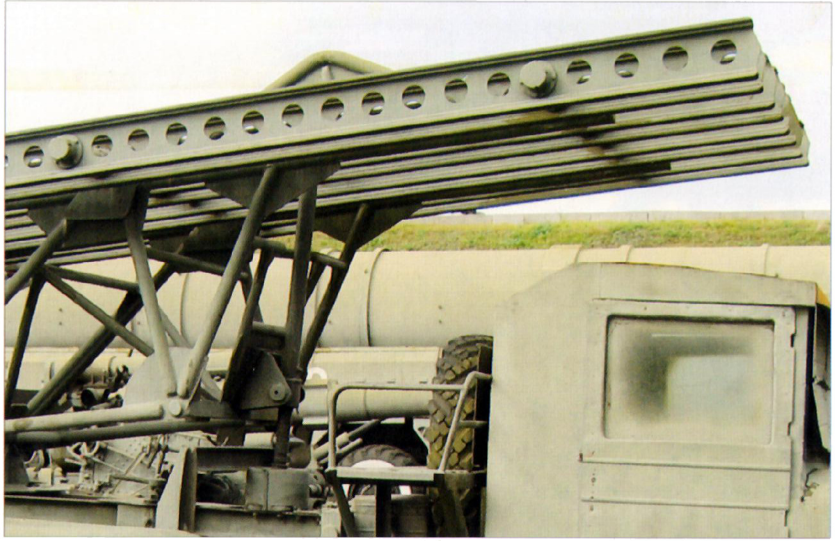
Fot. Albert Osiński

Overall view of the rack. The launcher consisted of eight steel, five-metre long, I-section launch rails. Each rail was loaded with two missiles: one on top and the other beneath the rail • Ogólny widok wyrzutni oraz konstrukcji kratownicy

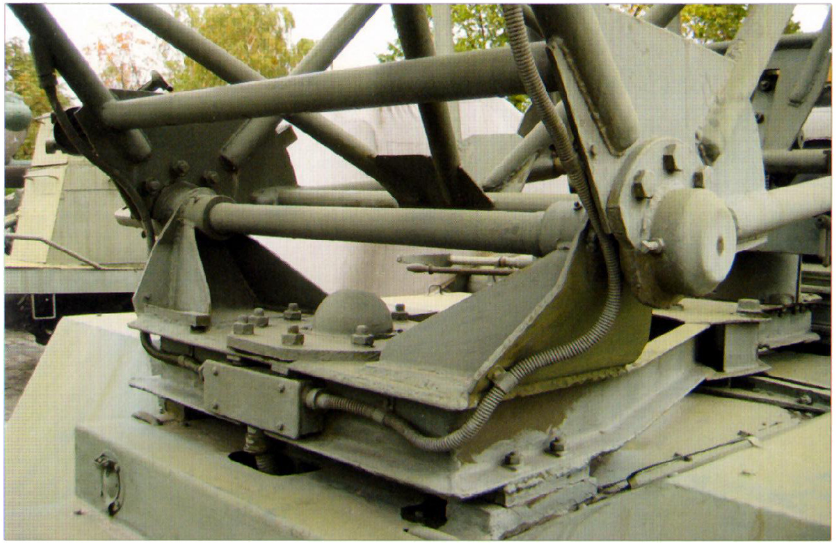


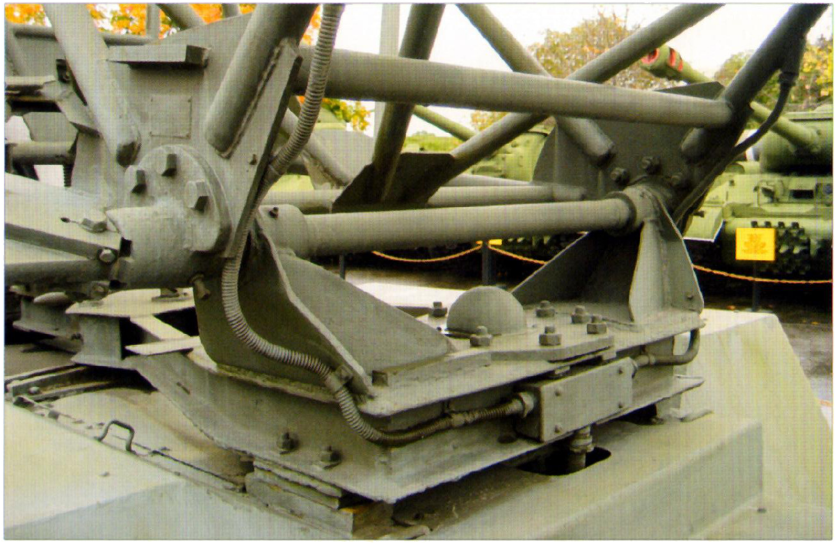


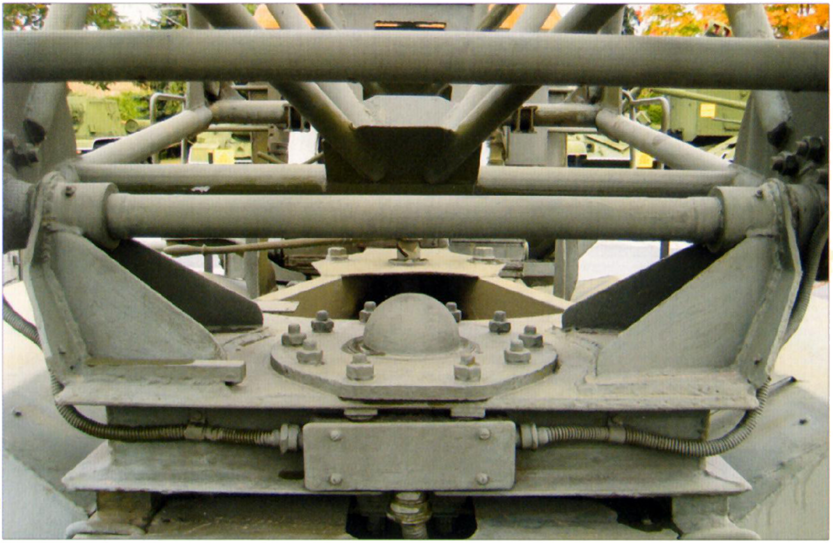
Dummy M-13 rockets and details of the rack. The M-13 missiles of 132 mm in calibre were triggered by electrical impulse from the driver's cabin • Atrapy rakiet M-13 oraz detale kratownicy wyrzutni



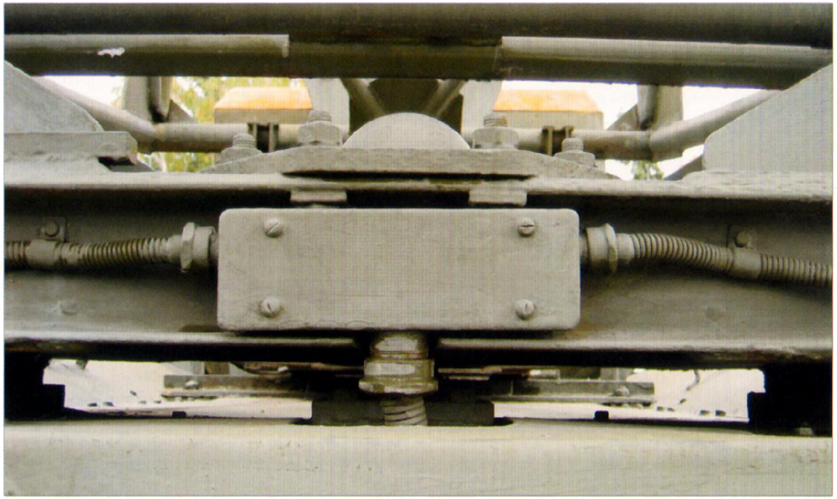
Fot. Albert Osiński



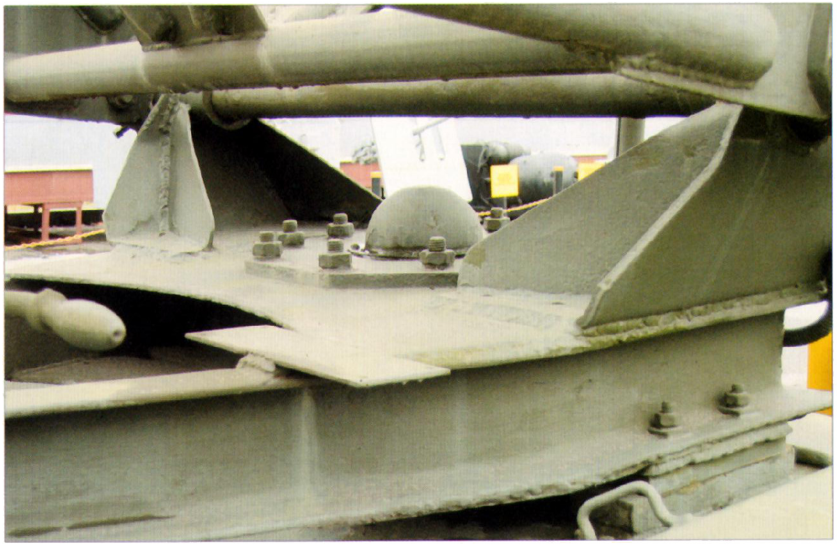


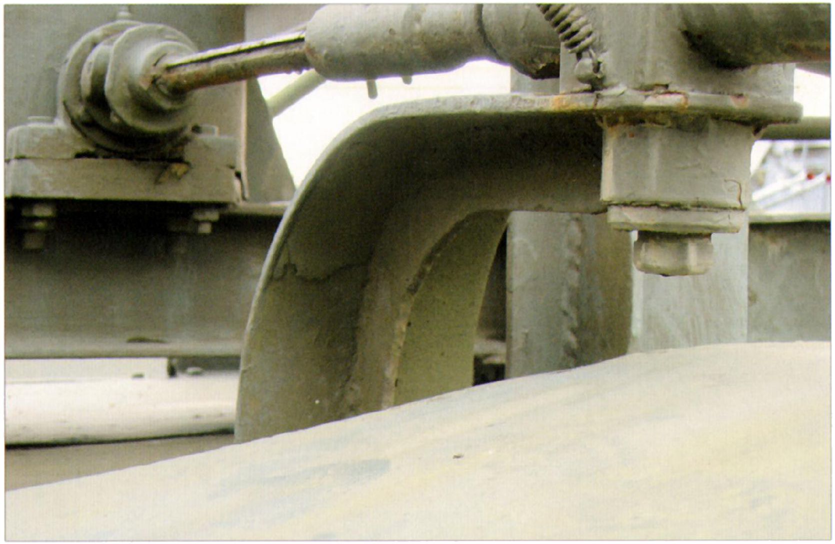


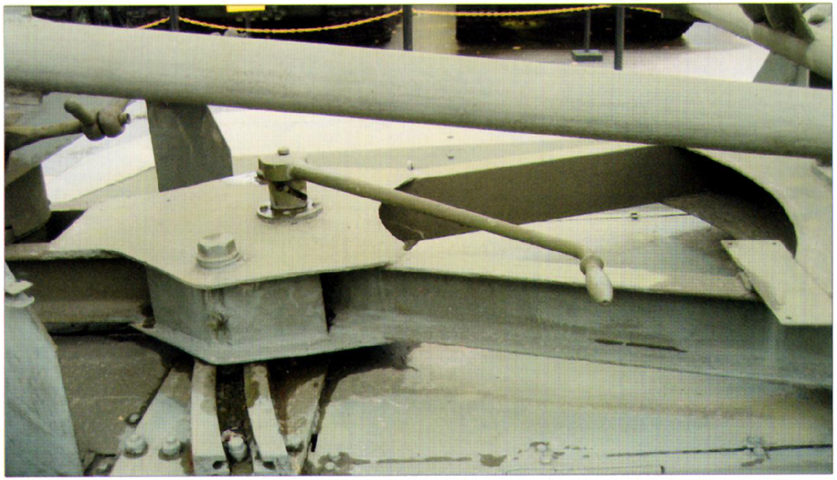
Fot. Albert Osiński



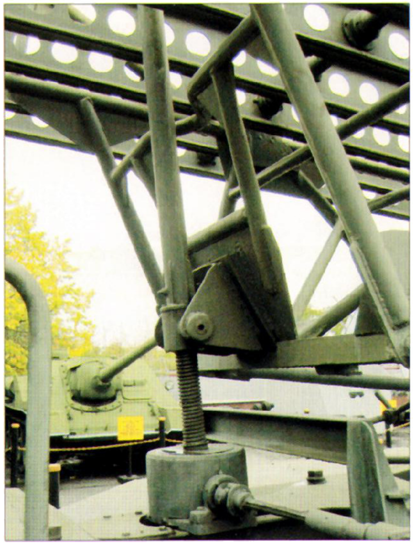
Rear part of the launcher with visible electrical wiring • Tylna część wyrzutni z widoczną instalacją elektryczną

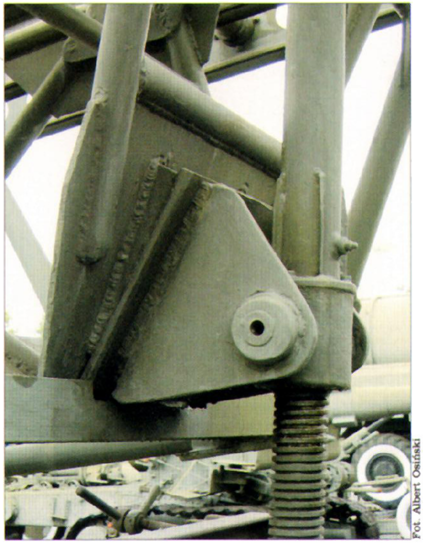




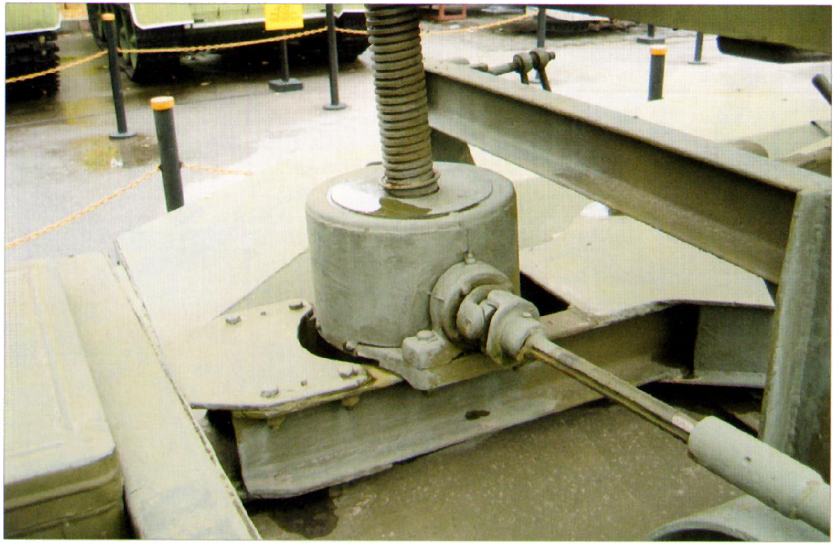


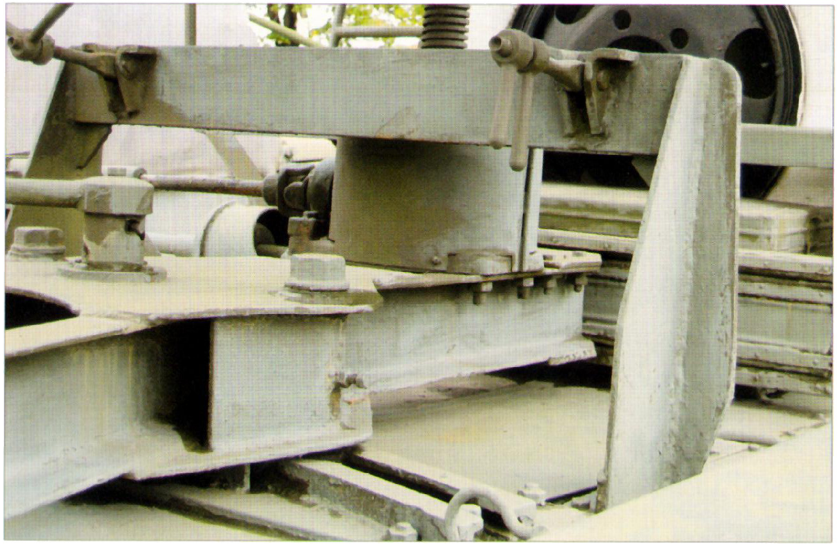
Details of the launcher's mounts. Visible are the lever blocking the horizontal movement and the lifting mechanism • Mechanizmy wyrzutni. Dźwignia blokująca ruch poziomy oraz mechanizm podnoszenia wyrzutni

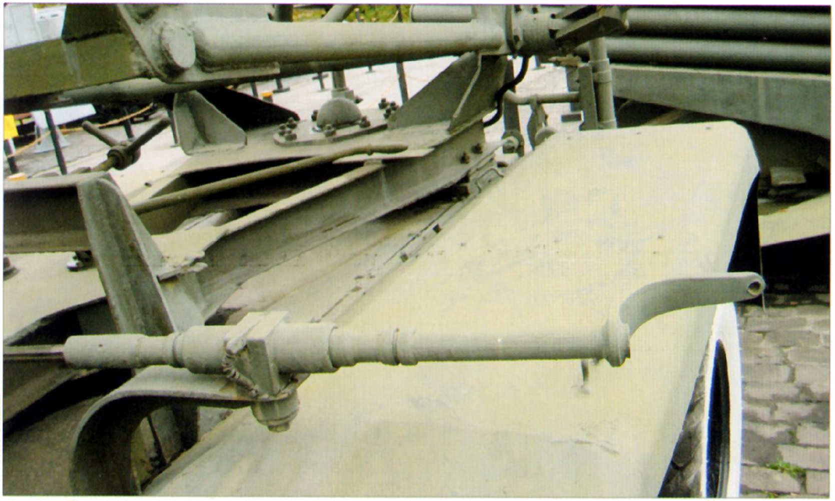




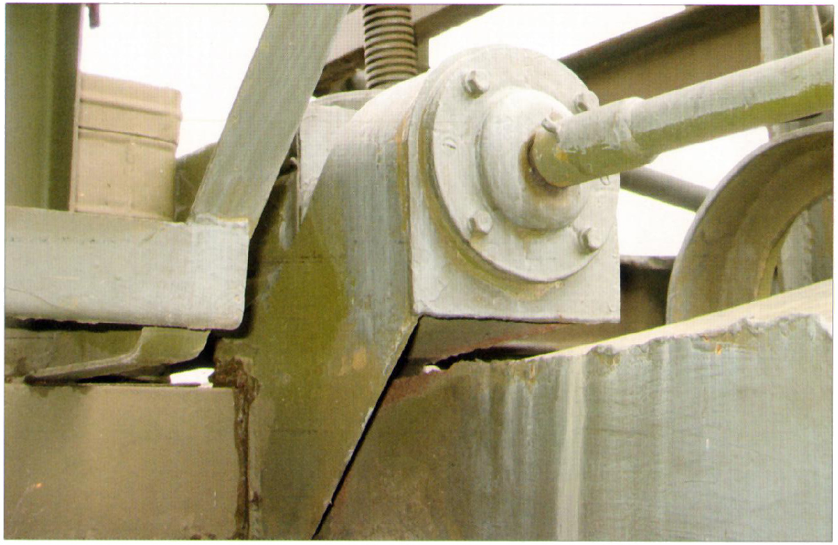
Fot. Albert Osiński



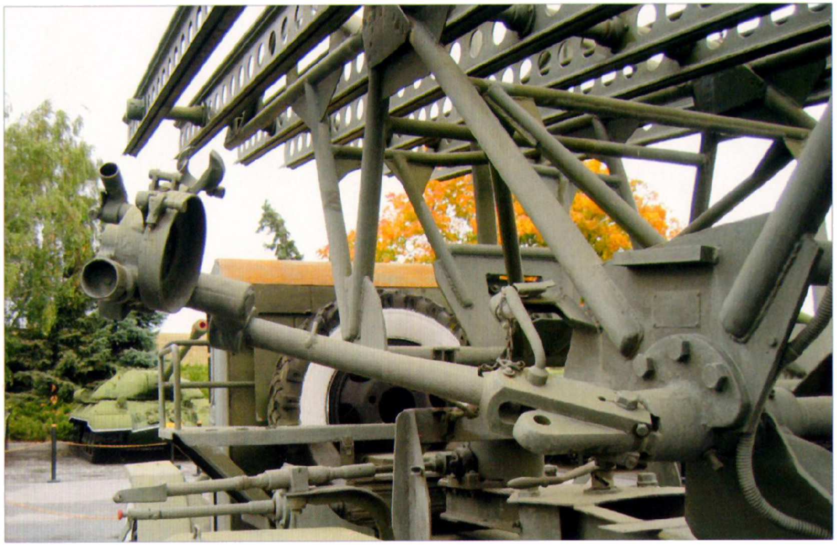


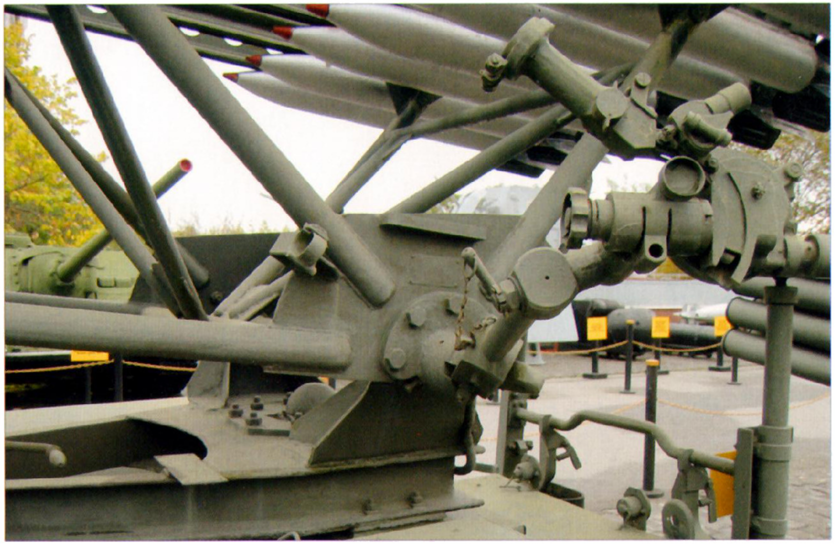


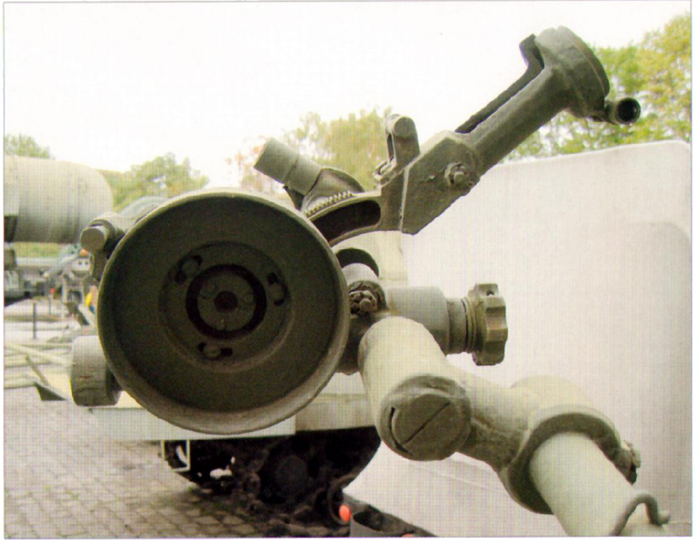
Fot. Albert Osiński

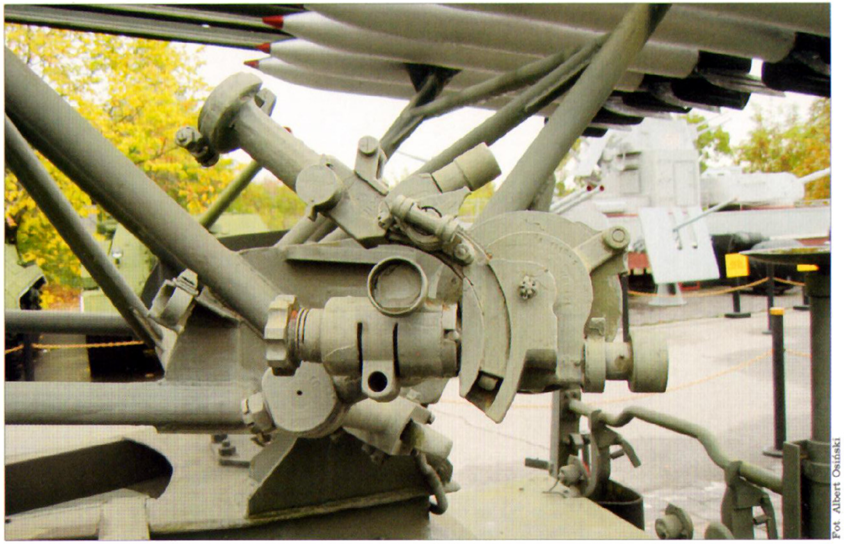


Launcher's lifting mechanism and the crank • Mechanizm podnoszenia wyrzutni wraz z korbą



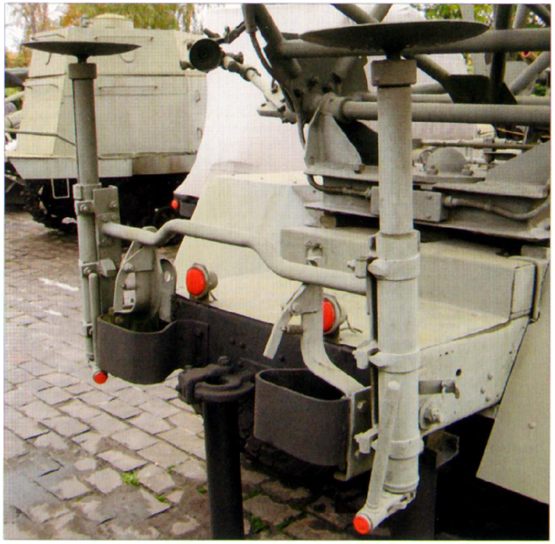


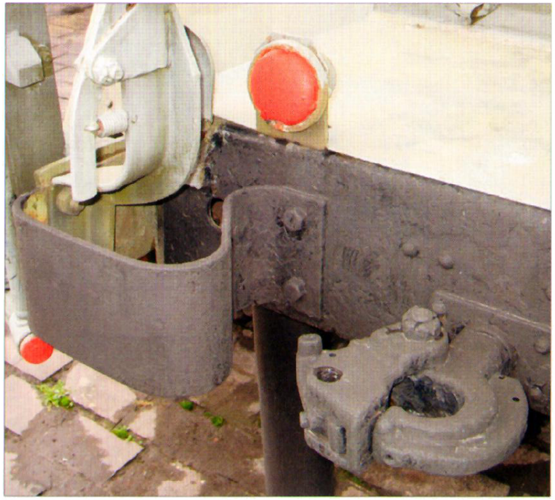




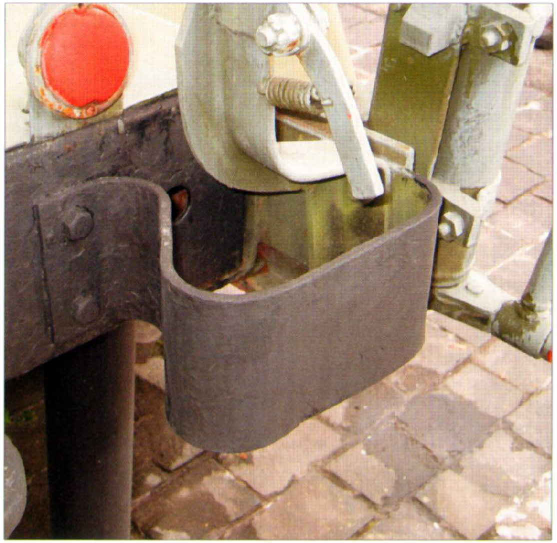
Aiming devices • Urządzenia celownicze

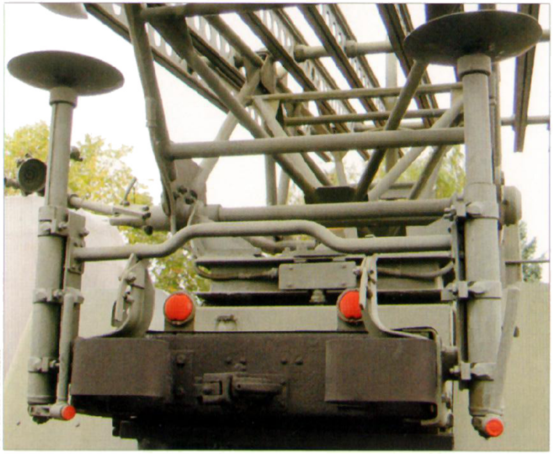
Fot. Albert Osiński





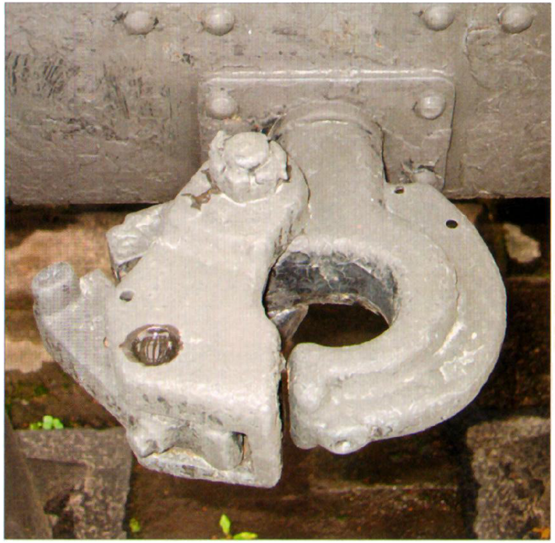
Rear chassis frame with a tow hook • Tył ramy wraz z hakiem holowniczym

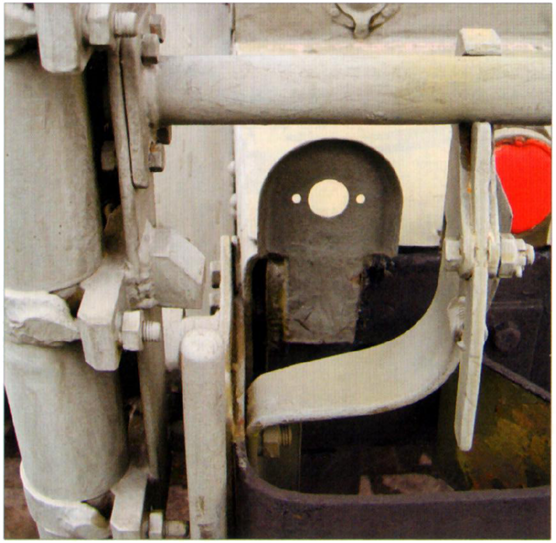


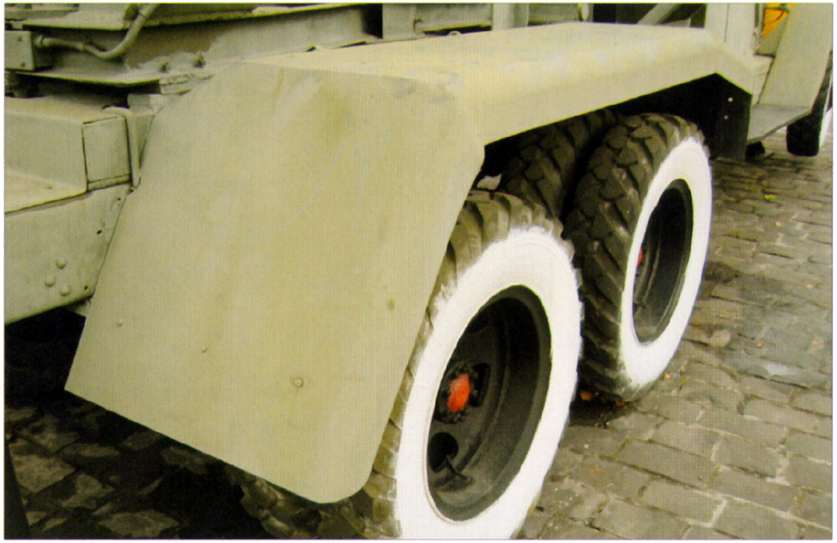


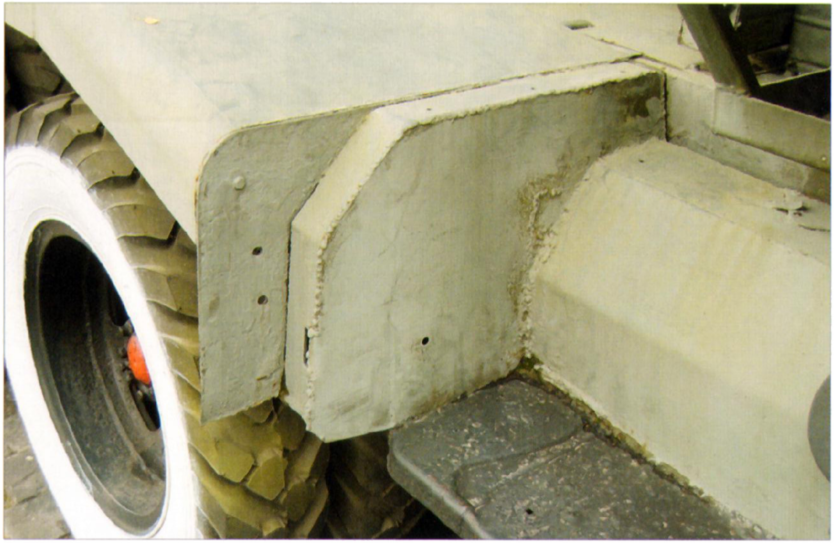
Fot. Albert Osiński

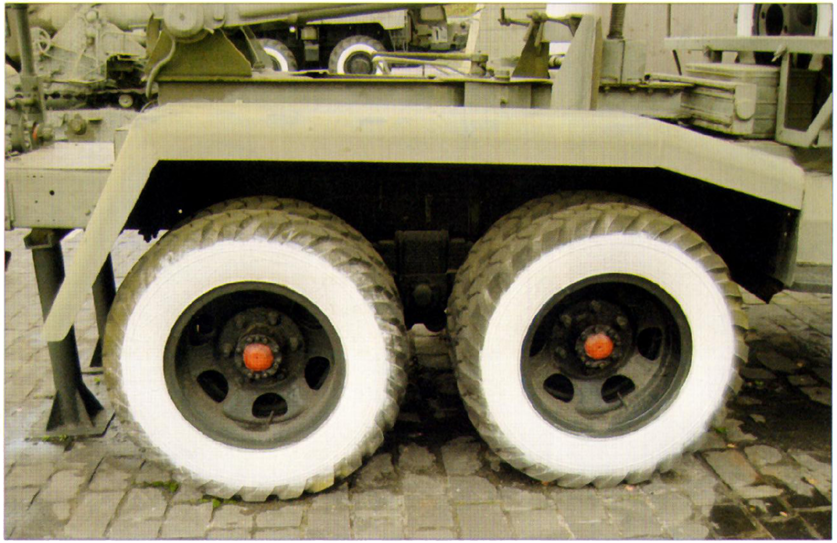
The vehicle's rear. The two jacks seen in the photo were set against the ground before firing to discharge the back axles springs and stabilize the platform • Tył pojazdu. Podpory rozkładane podczas odpalania rakiet



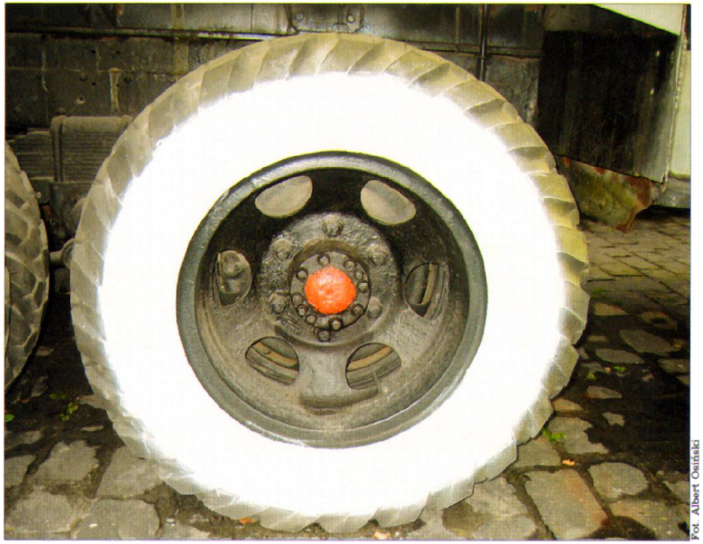




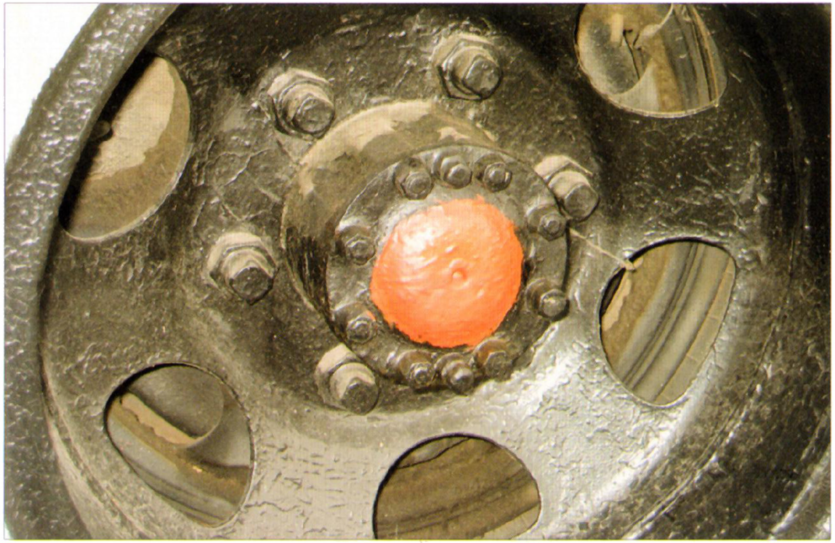




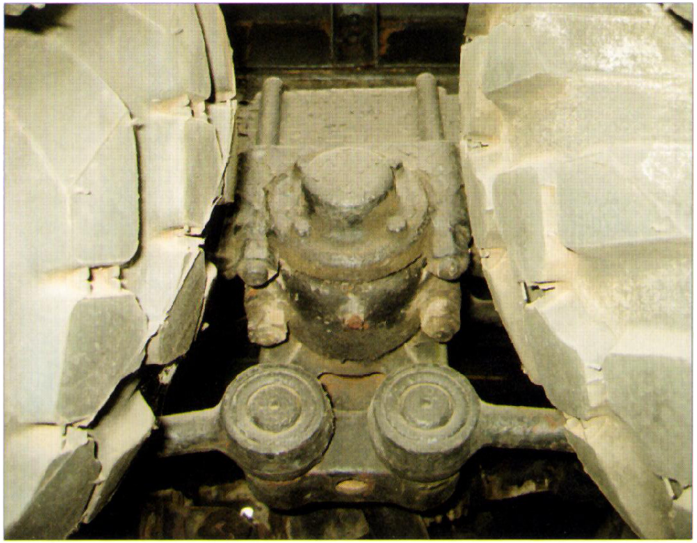
Rear suspension fitted with double road wheels • Tylne zawieszenie zaopatrzone w zdwojone koła jezdne



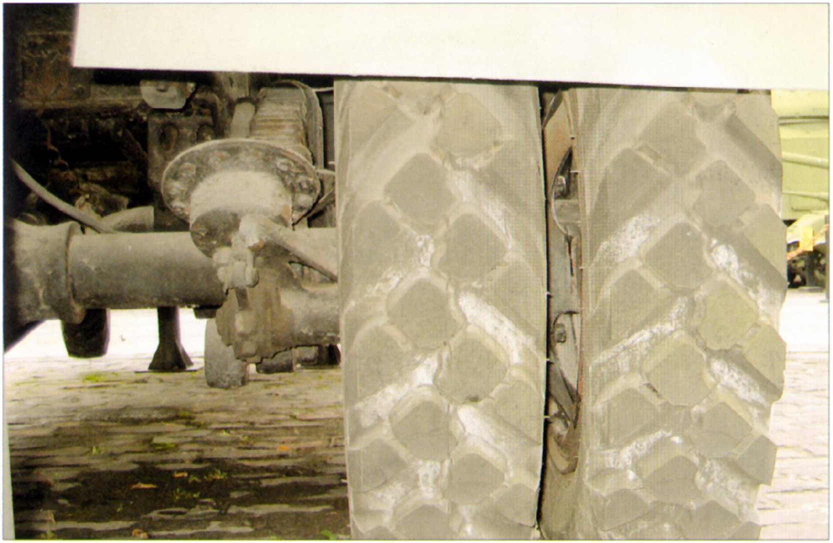
Fot. Albert Osiński

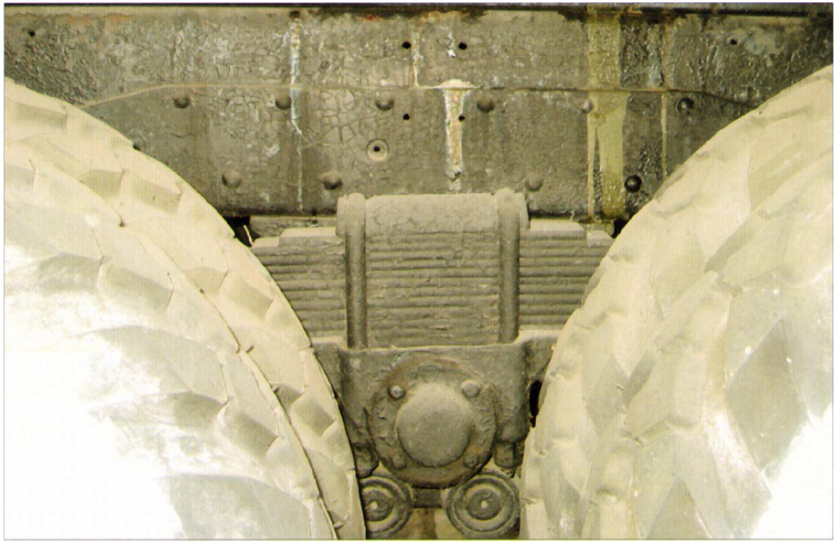


Wheel rim and hub • Felga i piasta koła

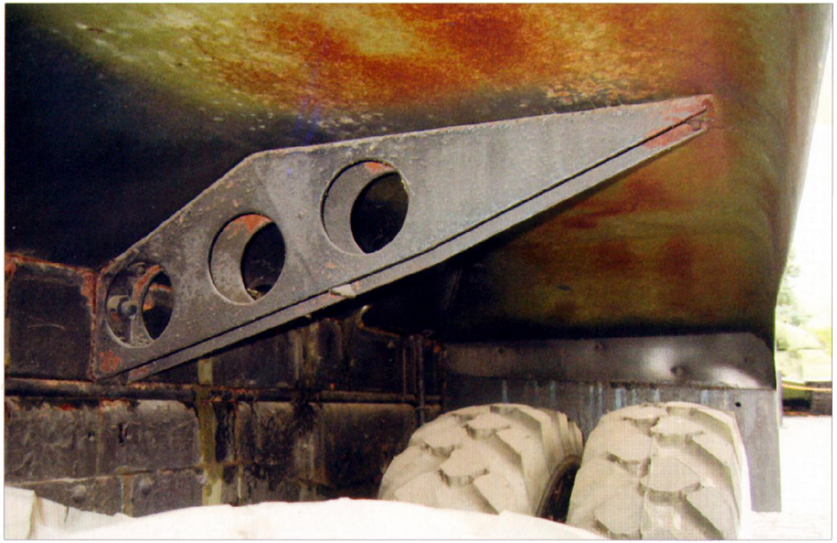


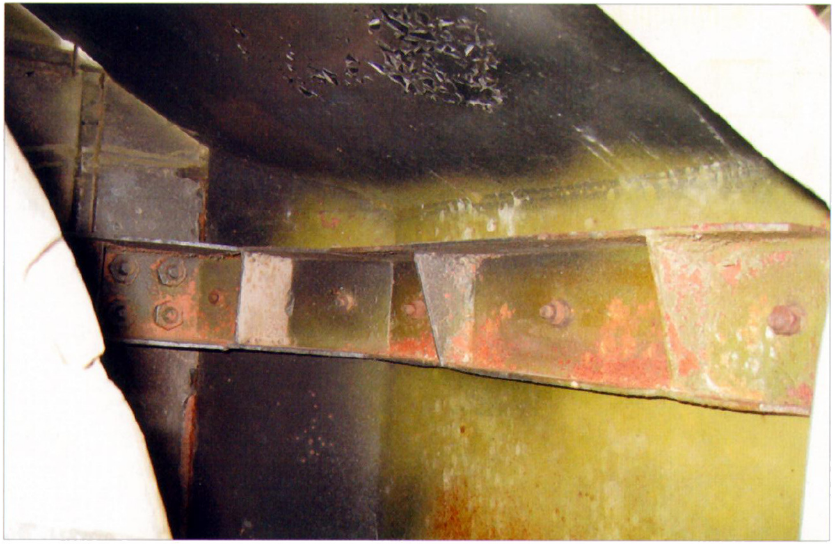
Rear suspension spring mount • Mocowanie resora zawieszenia tylnego

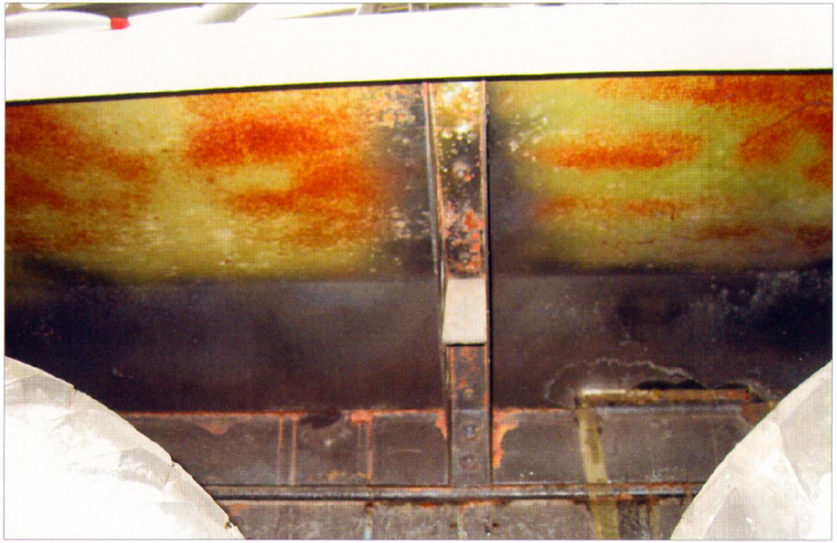




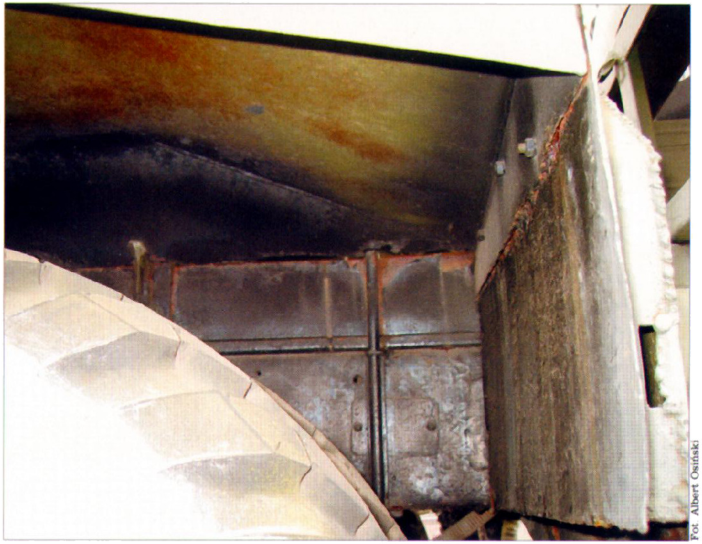
Fot. Albert Osiński



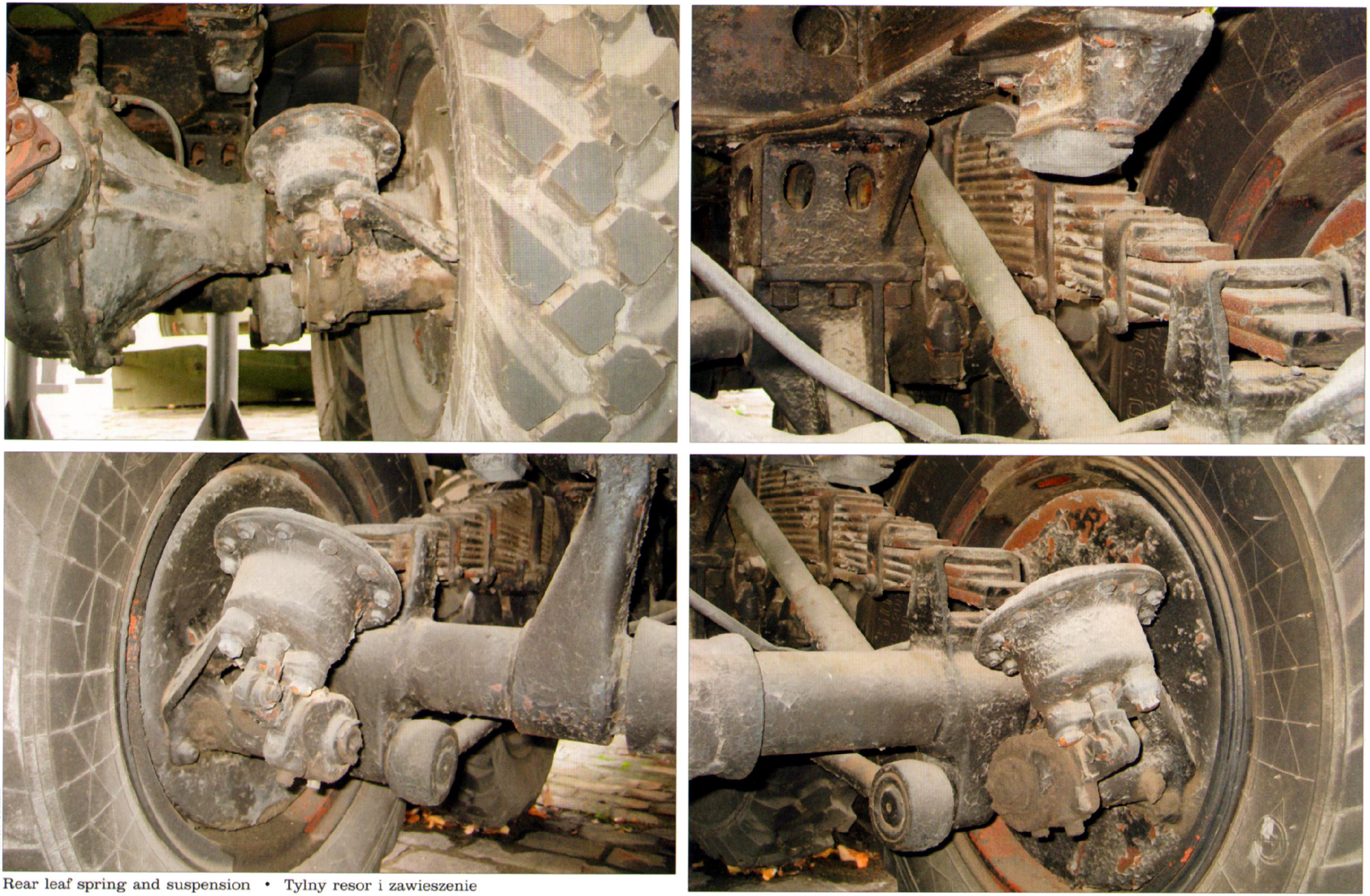




Rear mudguard bay • Wnęka tylnego błotnika

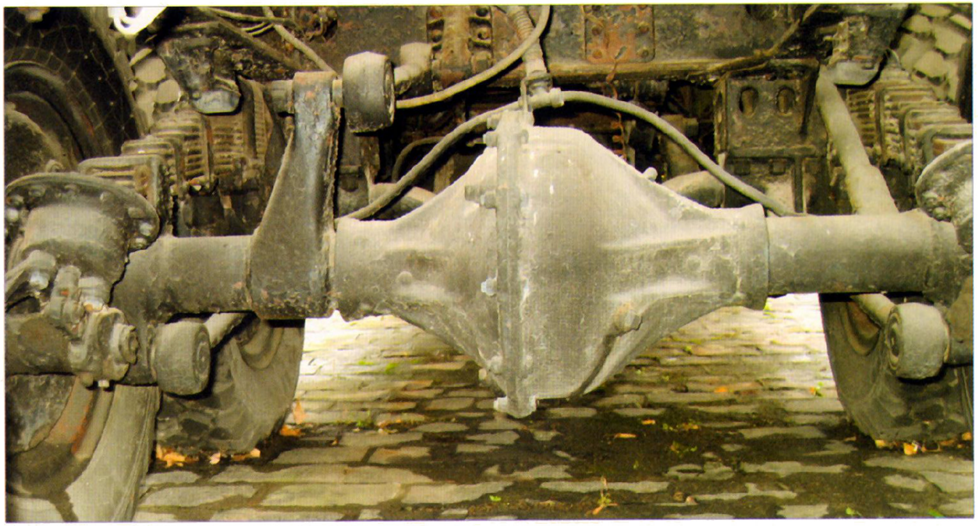


Fot. Albert Osiński

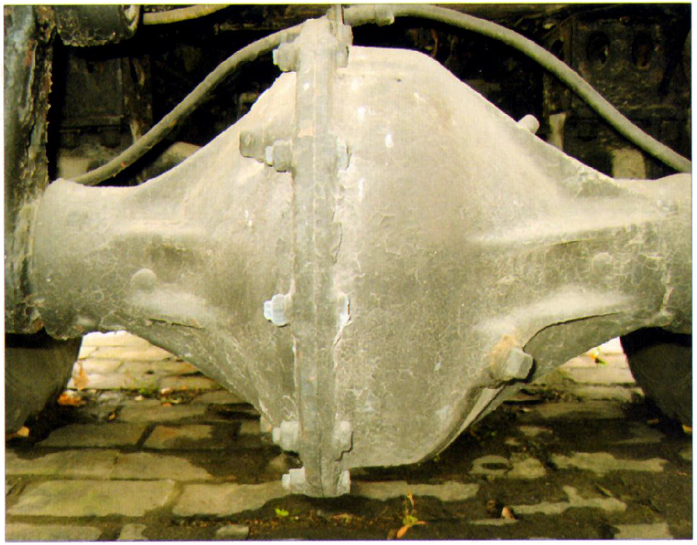


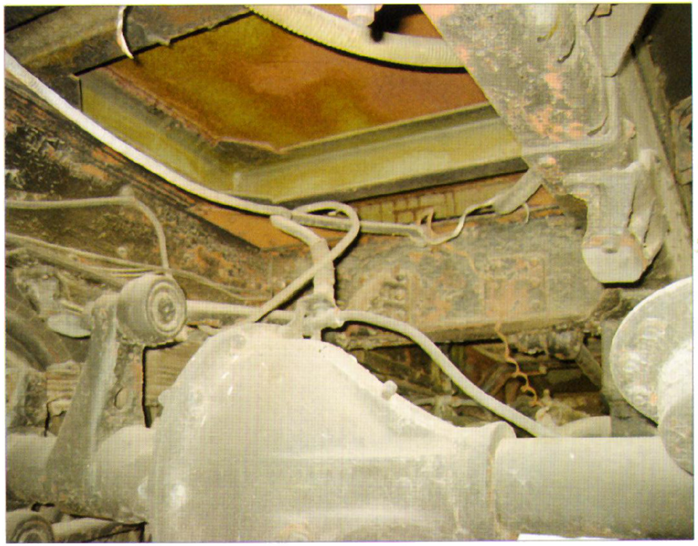
Fot. Albert Osiński

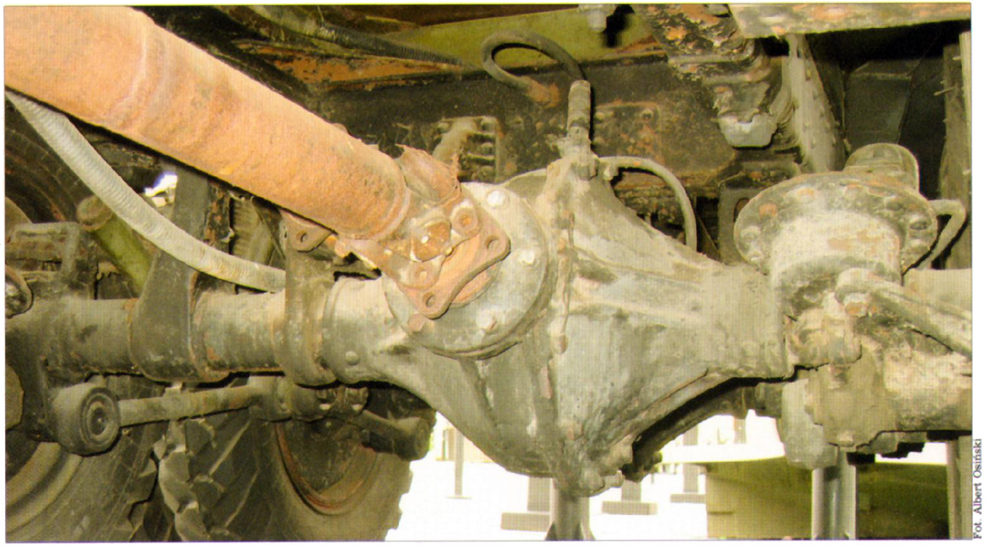
Rear leaf spring and suspension • Tylny resor i zawieszenie



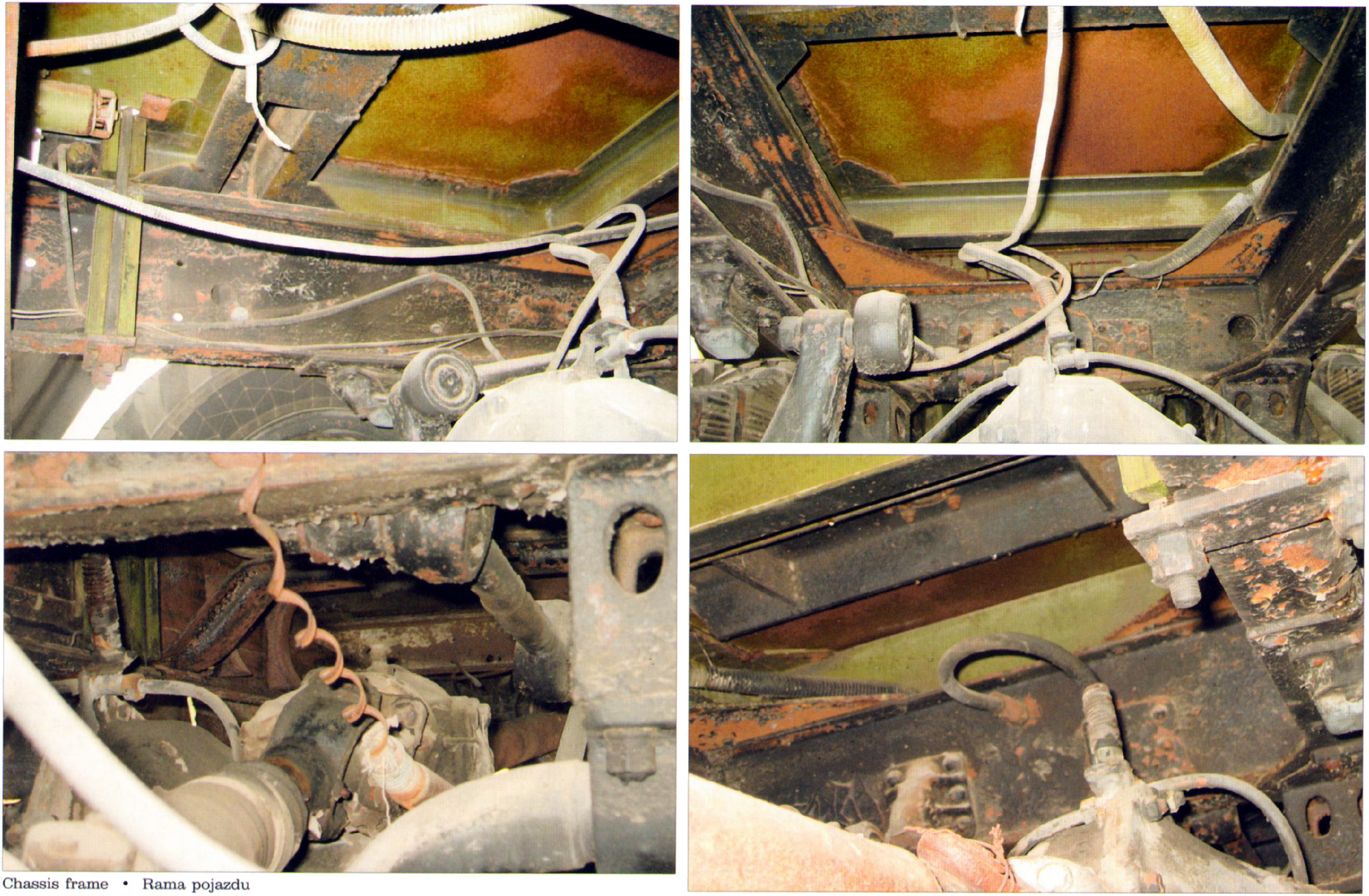
Rear differential gear casing • Tylny most





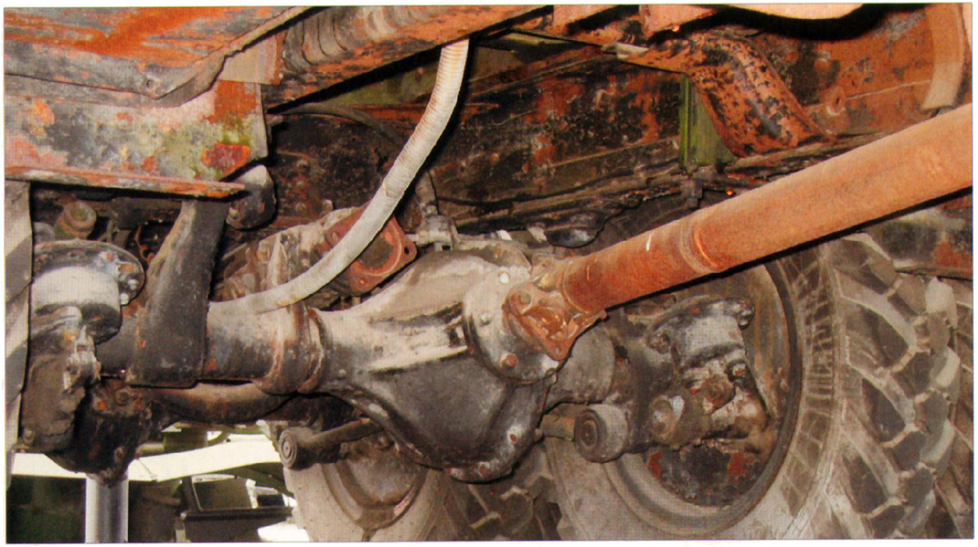


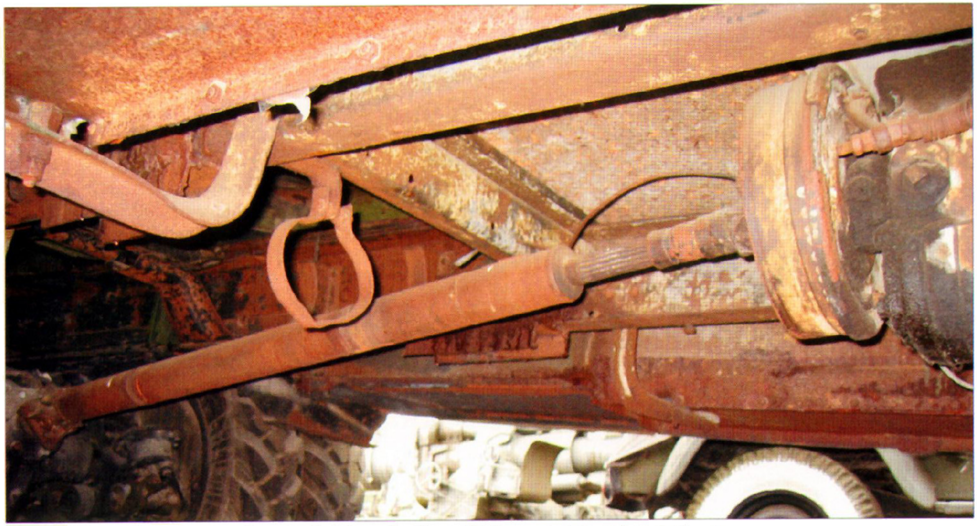
Fot. Albert Osiński



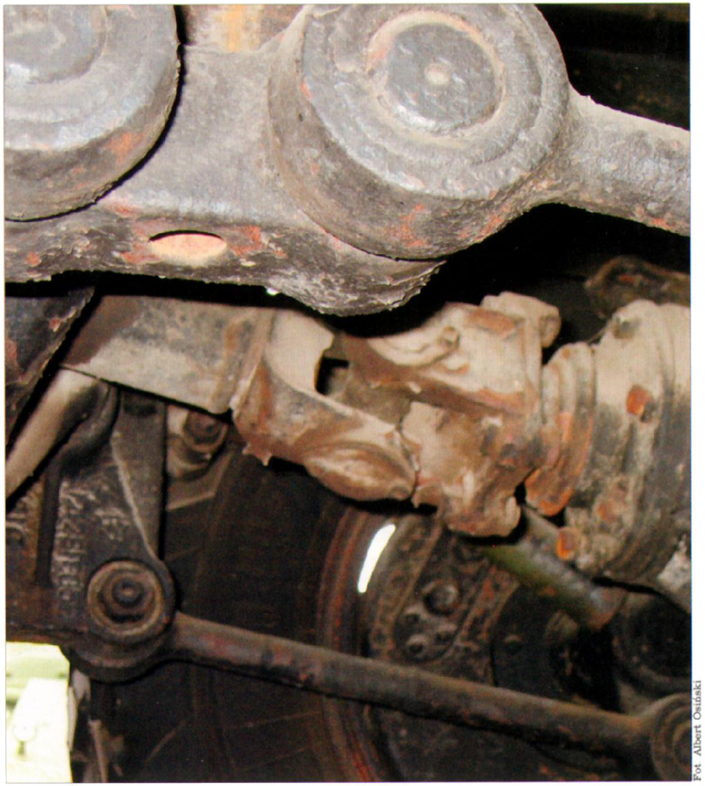
Fot. Albert Osiński

Chassis frame • Rama pojazdu





Rear differential gear casing and drive shaft • Tylny most i wał napędowy



Fot. Albert Osiński

Technical data on Katyusha BM-13N

Rocket missile calibre	132 mm
Missile weight	42,5 kg
Number of missiles	16 pcs.
Range of fire	8470 m
Maximum elevation	45°
Arc of fire	20°
Time of firing 16 missiles	10-12 seconds

TOPSHOTS
ISBN 83-89088-94-0

Fot. Albert Osiński